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# Peninsula Academies Replications: 1985-86 Evaluation Report

Charles Dayton, Dorothy Reller, and John Evans

January 1987

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# Peninsula Academies Replications: 1985-86 Evaluation Report

Charles Dayton, Dorothy Reller, and John Evans

January 1987

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This paper was sponsored and published by Policy Analysis for California Education, PACE. PACE is funded by the William and Flora Hewlett Foundation and directed jointly by James W. Guthrie and Michael W. Kirst. The analyses and conclusions in this paper are those of the authors and are not necessarily endorsed by the Hewlett Foundation.

This evaluation of the Peninsula Academies Replications was funded in part by a special grant from the William and Flora Hewlett Foundation.

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***Berkeley, California***
***January 1987***

## EXECUTIVE SUMMARY

The Peninsula Academies are a three-year high school program for at-risk students, designed to provide them with incentives both to graduate and to acquire labor market-relevant skills. An Academy combines academic and technical training in a school-within-a-school setting. It is based on a school-business partnership, and offers students access to guest speakers, career-oriented field trips, employee mentors, and work experience.

Since the fall of 1981, the Peninsula Academies have been operated by the Sequoia Union High School District in Redwood City, California. In the fall of 1985, ten replications of this program were begun under state sponsorship, with support stemming from AB3104. The new programs served approximately 500 students, mostly in grade 10, in eight districts located throughout the state. This report provides a preliminary appraisal of these programs. Longer term evaluations of the model program itself are available from its evaluator, the American Institutes for Research in Palo Alto, California.

Academies are three-year programs, only the first year of which has been implemented to date. Most evaluators feel it is premature to judge the eventual impact of any program after just one year. Thus this report must be viewed as a preliminary assessment of these programs. It has two foci. The first is the quality of implementation of the programs in each of the sites. The second is evidence to date of measurable impact on students. At this stage, the first of these is probably more important, but as we gathered outcome data as well, even though they are imperfect as yet, they are presented here.

This evaluation was conducted through the support of the William and Flora Hewlett Foundation. It is based on site visits and questionnaire responses from teachers and administrators in each site, as well as from a sample of parents and company representatives. It also rests on student data gathered from each of the high schools, including attendance, retention, credits earned, and grades, as well as a pre-post student questionnaire. These data come from both the 1985-86 school year, the program's first operating year, and the preceding year, 1984-85, thereby reflecting changes in student performance. In six of the Academy sites, a comparison group of students matched to those in the Academy was tracked, providing a second type of contrast.

The Academy model is a complex one, specifying a school-within-a-school structure in the high school and a number of business activities stemming from the intended school-business partnership. There were two distinct variations from the Academy model, however. In one district, two Academies failed to provide the intended academic, school-within-a-school components. In another district, two Academies began with approximately 100 ninth graders, rather than the smaller number of tenth graders specified by the model. Overall, there were various components not yet fully realized in a number of the sites.

A total of 538 students were enrolled in the ten Academy sites. Of these, 43% were female, 57% male. By ethnicity, 38% were White, 30% Hispanic, 24% Black, and 7% Asian.

Findings

The general finding of this evaluation of the ten Academies' first operational year is that there is encouraging evidence from two or three well implemented sites that the Academy concept can produce important gains in the attendance, grades, earned credits, and reduced dropouts of at-risk high school students. Compared to similar students not in the program, Academy students in these sites improved their attendance levels by 5% to 18%, their retention by 5% to 15%, and their GPA's by more than a full grade point. In most of the remaining sites, however, the evaluation evidence was inconclusive.

Although in this first operational year many of the sites experienced difficulties in implementing both the program and a full evaluation of it, the fact that significantly positive outcomes were registered in a few sites where rigorous evaluation procedures were followed is important. It demonstrates that the Academy concept is viable, and indicates that if the successful elements and procedures in these effective sites can be implemented generally, the successful outcomes can also be widely reproduced.

More specifically, the evaluation data revealed the following:

I. Responses from the pre-post student questionnaires show that:

- Academy students' attitudes toward school improved significantly;
- Academy students' self-esteem improved significantly;
- Students liked the Academies significantly better than their regular high school program. Students' ratings of the program were strongly correlated with their perception of having received the extra help they needed with their school work. Attendance and GPA were also positively correlated with this factor;
- Students did not have more precise post-graduate plans as a result of the Academies.

II. The school records data showed that:

- The mean attendance rate for Academy students was 90.5%, up from 83.5% in 1984-85;
- The mean number of credits earned for Academy students was 53.5, up from 48.7 in 1984-85;
- The mean grade point average (4.0 grading system) for Academy students was 2.1, up from 1.9 in 1984-85.

The absence of consistent comparison group data means these gains should be regarded cautiously.

III. It is impossible to provide a cost-benefit analysis at this stage. Each Academy receives a $50,000/year state grant, which must be matched by both the participating district and cooperating companies. Given the 538 enrollment figure across the ten sites this year, this yields a per-pupil cost to the state of $929. This is estimated to become approximately $500/pupil/year when the programs are fully implemented. Adding the district and corporate matches of support, across the three years of an Academy, the combination of state and local support is expected to total approximately $4,500 for a given student.

While it is too early to estimate the benefits of the programs, data from studies conducted in New York and Los Angeles of the benefits of keeping students in school and providing them with basic job skills suggest such an investment is cost-effective. The Los Angeles study (Catterall, 1985), for example, suggests that society pays $70,750 for each dropout (in crime, welfare, health, and employment services, plus lost tax revenues), while the youth personally loses over $150,000 in lifetime wages. These figures are broad estimates, however, not precise measures.

In summary, taken across all ten sites, the evaluation data indicate that the Academy concept has been demonstrated to be viable, but that substantial improvements are needed in both program operations and evaluation procedures if a broadly successful program is to be achieved, and a complete evaluation of its effectiveness is to be possible.

## Recommendations

Evidence from the Peninsula Academies themselves, now in their sixth year, suggests that while this model has the potential to have a significant impact on student outcomes, careful implementation and adherence to certain central features of the model are necessary. The evidence from the first year of the ten replications confirms this fact.

This evidence emerges from the fact that those sites that most fully followed the model and most carefully implemented the program showed the best results. What are the features of the model that appear critical to success?

- A defined student selection process that results in the enrollment of potentially successful, at-risk youth in the program;
- That the full school-within-a-school structure be implemented, so that Academy students have in common both a technical class and a core set of academic courses, taught by teachers who have a common preparation period during which they can coordinate their activities and curriculum.
- Strong private sector support, including: involvement in a governing body so that decision-making is conducted jointly by educators and employers; input into the technical curriculum; and support for certain critical features of the program, including business speakers, field trips, mentors, and work experience.

- Strong district and school support, so that Academy teachers have the necessary planning time to coordinate the program's activities, school counselors and administrators support the program, and the facilities, equipment, and curricular materials are adequate.

The fact that not all these elements were present at a number of the sites during the 1985-86 school-year raises the question of how to correct this problem. While there is a case to be made for some flexibility in the model, and the first year of most programs includes start-up problems, there is also the need to enforce the core features of the model essential to its success. The following represent recommendations in this regard:

- Stricter administration of the grants by the State Department of Education, including a mechanism for cutting off grants where called for;

- Fuller training of site representatives in the model, prior to and during its implementation;

- Language in the legislation supporting the programs that includes clearer and firmer guidelines for receipt of state money for support of an Academy.

In addition, the weaknesses in the evaluation itself, detailed in the report, must be corrected. Plans are in place to accomplish this.

CONTENTS


Executive Summary . . . . . iii

Policy Analysis for California Education . . . . . ix

Introduction . . . . . 1

- Academy Concept . . . . . 1
- The Evaluation Design . . . . . 3
- Overview of the Report . . . . . 5

Chapter I: Site Reports . . . . . 7

- Health Careers Academy, East Bakersfield High School . . . . . 8
- Edison Financial Academy, Edison High School . . . . . 17
- Franklin Food Services and Hospitality Academy, Benjamin Franklin High School . . . . . 27
- East Side Electronics Academies, Independence High School . . . 37
- Computech Academy, Mountain View High School . . . . . 48
- The Health Academy, Oakland Technical High School . . . . . 55
- Foothill Computer Academy, Oak Ridge High School . . . . . 63
- Rio Cazadero Academy, Rio Cazadero High School . . . . . 71
- Johnson Corporate Academy, Hiram Johnson High School . . . . . 81
- East Side Electronics Academies, Silver Creek High School . . . 90

Chapter II: Cross-Site Summary . . . . . 101

- Enrollments . . . . . 101
- Program Retention . . . . . 102
- High School Retention . . . . . 103
- Attendance . . . . . 104
- Credits Earned . . . . . 105
- Grade Point Average . . . . . 106
- Students' Liking of School . . . . . 107
- Students' Self-Esteem . . . . . 108
- Student Ratings of the Academies . . . . . 109

Chapter III: Analyses and Conclusions . . . . . 111

- First-Year Implementation . . . . . 111
- Cost Analysis . . . . . 113
- Student Impact . . . . . 115
- Recommendations . . . . . 118
- Questions for Further Research . . . . . 120

References/Bibliography . . . . . 123

Appendix: Technical Notes . . . . . 125

# *Policy Analysis for California Education*

Policy Analysis for California Education, PACE, is a university-based research center focusing on issues of state educational policy and practice. PACE is located in the Schools of Education at the University of California, Berkeley and Stanford University. It is funded by the William and Flora Hewlett Foundation and directed jointly by James W. Guthrie and Michael W. Kirst. PACE operates satellite centers in Sacramento and Southern California. These are directed by Gerald C. Hayward (Sacramento) and Allan R. Odden (University of Southern California).

PACE efforts center on five tasks: (1) collecting and distributing objective information about the conditions of education in California, (2) analyzing state educational policy issues and the policy environment, (3) evaluating school reforms and state educational practices, (4) providing technical support to policy makers, and (5) facilitating discussion of educational issues.

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## INTRODUCTION

During the 1984 session of the California legislature, Assembly Bill 3104 was passed, and on September 30 of that year it was signed into law by Governor Deukmejian. The bill provides for the establishment of ten replications of a state-designated model program, the Peninsula Academies, which have been operated since 1981 by the Sequoia Union High School District in Redwood City, California. In addition, the bill specified that two years after its effective date, there was a requirement to "evaluate the Peninsula Academies model program and report to the Legislature regarding issues which shall include, but not be limited to, the cost-effectiveness and educational quality of the program."

In the fall of 1985, after a year of competitive selection and program planning, the ten Peninsula Academies replications began operation. During the past year, these new Academies served approximately 500 students in 10 high schools around the state, and during the 1986-87 school-year will serve approximately 1,000 students. As three-year programs, the Academies are still at a developmental stage, and will only be fully implemented in the 1987-88 school-year.

### Academy Concept

What are the Academies? Why are they of interest? There are a substantial number of students dropping out of high school in California, by recent calculations approximately three of every ten who enter. In urban schools and among minority students, this figure often exceeds 50%. Many of these youths want to work but lack the necessary skills to find and hold jobs, resulting in a high youth unemployment rate. In a sense, the reasons are obvious. For many youths, high school is a boring, negative experience, with little apparent relationship to the future.

When a young person drops out of high school before graduating, the loss is enormous. Lifetime expected earnings immediately drop dramatically. Chances of welfare dependency rise. The possibility of involvement in drugs

and crime increases. A social stigma may attach itself to the youth, often for life.

The loss is a societal one as well, in the cost of social programs designed to serve the unemployed and the lost tax dollars. Further, it can be seen in the reduced competitiveness of the United States in the international marketplace. The nation is engaged in an intense economic competition with other countries today and is losing ground on many fronts.

At the same time, the economy is undergoing dramatic changes. The majority of new jobs are in the service sector, and many of these require skills beyond normal high school training. Meanwhile, there will be an estimated 40% drop in the number of young people in the work force by the year 2000, and the proportion of youths who are Black or Hispanic will rise dramatically. Unless they can be given useful skills, both they and the country will be losers.

An Academy is a program designed to provide the potential dropout with motivation for success, a useful and productive high school experience, and skills that are valuable to both the economy and the youth. It includes the following elements:

- A school-within-a-school structure, in which students are given a home base and strong support, along with high standards, challenges, and incentives to graduate
- A combination of academic and technical training, the latter related to a specific job field that is healthy and growing in the local labor market, such as computers, electronics, banking, health, and hotel/restaurant services
- A school-business partnership base which allows teamwork between the high school and cooperating companies, to provide youth with training, mentors, and jobs, and to provide companies with needed employees

Students enter an Academy in grade 10, and take a full complement of academic classes, plus a technical "lab" class. Classes are taught by a team of Academy teachers who coordinate their efforts and relate the academic and technical subjects. Guest speakers and field trips to work sites are

emphasized. This pattern continues in grade 11, with the addition of a company mentor, an employee who volunteers to be a career-related big brother or sister. A summer job is provided after grade 11, related to the field of training. In grade 12, the student continues with the technical lab, but returns to mainstream academic classes. A part-time job during the last semester of high school is also provided, along with assistance in identifying either permanent employment upon graduation or a post-graduate education program.

As currently structured, the ten Academies are supported by $50,000/year state grants, through the 1986-87 school-year. These grants require full matching amounts from both the school district and cooperating businesses. Thus the state is part of a three-way partnership supporting the programs. The support of business is crucial, ensuring the utility of the training and the currency of the program to changing labor market conditions. In each locale, program management decisions are made jointly by school staff and cooperating companies.

## The Evaluation Design

The Peninsula Academies, the model for these ten programs, has been evaluated since its inception in 1981 by a private research firm (the American Institutes for Research, in Palo Alto), through a grant from the William and Flora Hewlett Foundation. This proved useful from both the standpoint of providing feedback to program managers to inform refinements in the program, and establishing program credibility once student outcome data became available. For these reasons, the Hewlett Foundation appropriated funds to permit evaluation of the ten replications as well.

Two broad categories of data have been gathered as part of the present evaluation: process and outcome. The first assesses whether programs have been implemented as designed and provides feedback to program managers regarding first-year strengths and weaknesses. The outcome evaluation measures changes in student performance that can be traced to program activities, answering the question: "Are the programs working?"

Process data included here stem from several sources. These include questionnaires administered in each site to program teachers and administrators, and to a small sample of parents and employers. Information also comes from observations made during visits to each of the sites during the planning period and first program year and discussions with program administrators and teachers.

The outcome evaluation includes five indicators of student performance: attendance, retention in school, credits earned toward graduation, and grade point averages. In addition, a student questionnaire was administered to program participants at their point of entry in the fall of 1985, and at the end of the 1985-86 school-year. Certain types of pre-to-post changes in student attitudes can be determined from these.

In order to have a means of comparing Academy students' performance against some specific backdrop, data were also collected from the previous school-year. Six of the sites elected to select a comparison group of students matched to those in the Academy (on the basis of school, grade level, sex, race, and past academic performance), and to assess both Academy and comparison group students during the year. Thus both historical and comparison group contrasts are presented in this report.

The evaluation originally designed for these programs was not fully implemented during this past year. Four of the programs elected not to have comparison groups (an option they were given), meaning results from those sites are less conclusive. Even in most of those sites where comparison groups were identified and followed, their comparability with the program students is not complete. And due to logistical problems some categories of data included in the evaluation design were not collected in a number of sites. Steps have been taken to address these shortcomings for the 1986-87 school-year, so that more complete and reliable evaluation information should be available a year from now. Meanwhile we present what information we have at this point, and urge that it be regarded cautiously.

## Overview of the Report

Academies are three-year programs, only the first year of which has been implemented to date. Most evaluators feel it is premature to judge the eventual impact of any program after just one year. Thus this report must be viewed as a preliminary assessment of these programs. It has two foci. The first is the quality of implementation of the programs in each of the sites. The second is evidence to date of measurable impact on students. At this stage, the first of these is probably more important, but as we gathered outcome data as well, even though they are imperfect as yet, they are presented here.

This report is organized so that cross-site summaries of the data, analyses, and recommendations follow the ten individual Academy site reports. The reader interested in an overview of the impact of the Peninsula Academy Replication Program is directed to Chapters II and III. Those seeking a more in-depth understanding of the workings of the program should read the separate site reports in Chapter I.

Each of the site reports in Chapter I includes:

- A capsule description of the program.
- A summary of the program impact on participants (enrollments, retention, attendance, credits, and grades).
- Student Questionnaire responses.
- Teacher, Parent, and Employer Questionnaire responses (numbers of respondents in these categories are small, and the feedback is not intended to be statistically reliable).
- Summary and recommendations.

Chapter II provides cross-site summaries of the data.

Chapter III provides a discussion and analysis of the data, and draws conclusions accordingly. Recommendations and questions for further research are also included.

An Appendix provides an explanation of the statistical procedures used, and other technical matters.

A separate evaluation report on the Peninsula Academies replications has been prepared by the Program Evaluation and Research Division of the California State Department of Education. It is based on the participant response information derived from site visits and interviews with Academy participants, and is focused on the elements and characteristics of the Academy model that are thought to be successful in promoting changes in student attitudes and acquisition of skills.

The model for these programs, the Peninsula Academies operated by the Sequoia Union High School District in Redwood City, California, has also been evaluated throughout its five-year history. Reports on these evaluations are available from the American Institutes for Research in Palo Alto, California.

# CHAPTER I

## SITE REPORTS

This chapter consists of separate reports for each of the ten Peninsula Academies replication sites. Each report consists of a program description, followed by sections on the program's impact on students, responses to the Student and School Personnel Questionnaires, parent participation and reaction, responses to the Private Sector Questionnaire, and a brief summary. An explanation of the data sources, categories, and analyses used in these reports is given in the Technical Notes Appendix to this report.

## HEALTH CAREERS ACADEMY, EAST BAKERSFIELD HIGH SCHOOL
## (Kern High School District, Bakersfield)

Description and Implementation

The Health Careers Academy (HCA) is located in a comprehensive, grade 9-12 institution that has been a fixture in the city of Bakersfield since the late 1930's. Set in a suburban middle and lower-middle class neighborhood, East High School has a high proportion of minorities among its 1735 students. It is one of ten high schools (and five continuation schools) in the district.

Forty-nine students were selected for the program and entered the HCA in September 1985. At the same time, a comparison group of 48 students was identified from among the applicants to the program who could not be contacted about their acceptance before the start of the school year.

Three teachers constituted the primary HCA instructional staff: a 2/5-time English teacher, 2/5-time science teacher, and 3/5-time math/health laboratory teacher. There was also an instructional aide who worked with the math/health teacher. The program director was a special projects administrator for the district. The students took an average of 3.7 Academy classes each semester. The HCA had access to a well-equipped laboratory classroom where the health care lab was taught, but the facility was not "dedicated" to the Academy. Thus, the HCA had no "headquarters" classroom or office at the school site this year, nor were the Academy classrooms located near to one another at the high school. The HCA teachers did not have the common preparation period recommended by the Academies model.

The local Private Industry Council is working with the HCA to arrange for summer jobs for Academy students. Among the community health facilities that have assisted the program are Mercy Hospital, Bakersfield Memorial Hospital, Hall's Ambulance Service, Kern Medical Center, and the Kern County Health Department.

## Program Impact

Comparability of Academy and comparison students. The Academy group was 48% female, and the comparison group was 33% female. The ethnic compositions of the two groups were:

| Ethnicity | Academy | Comparison |
|---|---|---|
| White | 33% | 35% |
| Hispanic | 51% | 56% |
| Black | 16% | 8% |

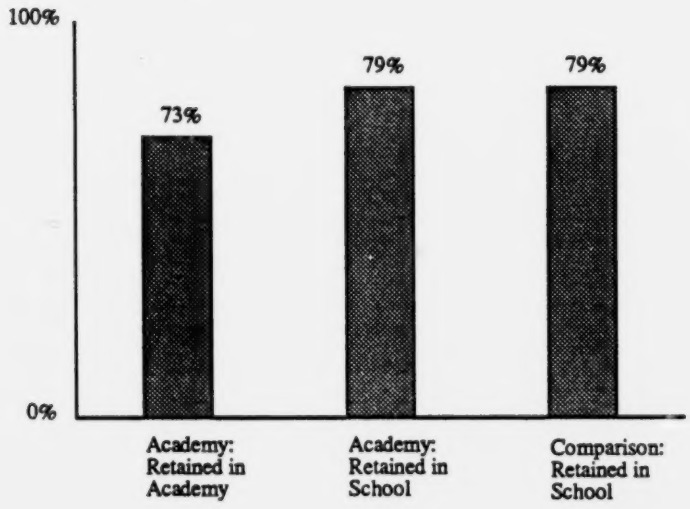
The following table shows the performance of the future Academy and comparison group students during the 1984-85 school year, before the HCA program began. The differences between the groups were small; in no case were these differences statistically significant.

Attendance, Credits, and GPA, 1984-85 School Year
Academy and Comparison Students

| Group | N | % Days Attended | Number of Credits Earned | GPA |
|---|---|---|---|---|
| Academy | 47 | 81.5% | 46.47 | 1.89 |
| Comparison | 48 | 78.2% | 45.49 | 2.25 |

Enrollment and retention. The following graph shows the percent of students retained in the Academy program, retained in school (including those who dropped out of the Academy but remained in school), and the percent of comparison students retained in school.

Retention Rates, 1985-86 School Year
Academy and Comparison Students




Attendance. The attendance rates for Academy students are compared to the students' own attendance in ninth grade (1984-85) and to the attendance of the comparison students this school year (1985-86).

Attendance
(Percent Days Attended)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 81.50% | 90.45% | 85.56% | 87.71% | + 6.21 |
| N | (43) | (48) | (43) | (43) | |
| Comparison | 78.20% | 90.75% | 67.67% | 81.38% | + 3.18 |
| N | (48) | (47) | (41) | (40) | |
| Difference | + 3.30 | - .30 | + 17.89 | + 6.33 | + 3.03 |

Credits. Here again, comparisons are made between the credits earned by the Academy students last year and this, and by the Academy and comparison students this year. The typical student at East Bakersfield High must earn 50 credits per year to stay on track for graduation.

Credits
(Average Number of Credits)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 47.91 | 24.21 | 25.00 | 49.96 | + 2.05 |
| N | (40) | (43) | (40) | (39) | |
| Comparison | 45.49 | 22.38 | 24.67 | 49.20 | + 3.71 |
| N | (48) | (46) | (38) | (38) | |
| Difference | + 2.42 | + 1.83 | + 1.33 | + .76 | - 1.66 |

Grade Point Average. Again, the grades of Academy students last year and this are compared, as well as those of the Academy and comparison students this year.

Grades
(Average GPA)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 1.93 | 1.88 | 2.04 | 2.00 | + .07 |
| N | (40) | (43) | (40) | (40) | |
| Comparison | 2.15 | 1.77 | 1.84 | 1.91 | - .24 |
| N | (48) | (46) | (38) | (38) | |
| Difference | - .22 | + .11 | + .20 | + .09 | + .17 |

## Responses to Student Questionnaire

A comparison of student responses to the incoming and year-end student questionnaires provides an indication of the influence of the Academy on career planning, attitudes toward school, and self-esteem. These responses are reported in this section, along with the students' ratings of some of the Academy's specific components and of the overall program.

Career planning. Four questionnaire items measured the students' progress in making career plans:

- Have a definite plan for what to do the first two years after high school graduation: pretest, 14%; posttest, 25%.
- Have a long-term career goal: pretest, 57%; posttest, 68%.
- Agree that it is important to gain job skills while in high school: pretest, 96%; posttest, 93%.
- Agree that becoming a success is not mainly a matter of luck, but is dependent on hard work: pretest, 62%; posttest, 72%.

Attitudes toward school. Incoming Academy students rated how well they had liked school the previous year, and then at the end of this school year, they rated how well they liked their year in the Academy.

- Found school "usually" or "very" interesting/liked school "quite a bit" or "very much": pretest, 39%; posttest, 47%.
- The teaching staff estimated that 71% of the students showed increased interest in school and learning this year, 8% showed decreased interest, and 21% showed no change in attitude toward school.

Attitudes toward self. At the end of the school year, the students were asked to estimate the change in their attitudes toward themselves, taking into consideration confidence about their abilities in school and in making friends.

- 75% of the students said they felt "much better" or "a little better" about themselves; 21% said there was no difference; and 4% said they felt "much worse" about themselves after a year in the Academy program.
- Agree that they would like to be someone different from themselves: pretest, 33%; posttest, 11%.
- The teaching staff estimated that 80% of the students had increased their self-confidence and esteem, 2% had decreased, and the rest had shown no change. One teacher commented that many of the Academy students had been "loners" who now felt that "they belong."

Student ratings of the Academy program. On the year-end questionnaire, students rated their contacts with the private sector, the Academy's equipment

and instructional materials, extra help received with schoolwork, and the overall program.

- Contacts with private sector. The students reported an average of 11 guest speakers this school year and 6 field trips to medical facilities and other health career work sites. They rated these experiences as follows:

| | Very Helpful | Somewhat Helpful | OK | Not Very Helpful | A Waste of Time |
|---|---|---|---|---|---|
| Guest speakers | 41% | 37% | 19% | 4% | -- |
| Field trips | 43% | 39% | 11% | -- | 7% |

- Equipment and materials. Students rated the quality of the equipment in their health laboratory classroom and of the books, kits, films, and other instructional materials in their academic and technical classrooms. Responses were as follows:

| | Excellent | Good | Average | Poor | Terrible |
|---|---|---|---|---|---|
| Equipment | 11% | 36% | 39% | 7% | 7% |
| Materials | 12% | 58% | 23% | 4% | 4% |

- Extra help. An Academy should be designed to provide for special individualized assistance with academic problems.

  - At the end of the school year, 50% of the students reported that they "always" or "usually" received the extra help they needed; 29% said "sometimes," and 22% said they "occasionally" or "never" received this help.

  - The students reported that the most frequent sources of extra help were: the teacher of the class where the problem arose (75%), another student (50%), another Academy teacher (46%), and parents (43%).

- Overall rating of program. At the end of the school year, students rated how well they liked the Academy compared to the regular school program. On a scale of 1 to 5, where 1 = Much Better and 5 = Much Worse, they gave an average rating of 2.07. The ratings were distributed as follows:

| (1) Much Better | (2) Slightly Better | (3) Same | (4) Slightly Worse | (5) Much Worse |
|---|---|---|---|---|
| 33% | 44% | 11% | 4% | 7% |

Most students reported no serious problems with the Academy this year, and the problems that were mentioned on the year-end questionnaire were mainly of a personal nature, such as not being able to get to class on time or not getting along with certain teachers. The students reported that their most positive experiences in the HCA this year were learning about human development, anatomy, and health (mentioned by 21%) and going on educational field trips (21%).

Responses to School Personnel Questionnaire

At the end of the school year, the three Academy teachers and the aide completed a questionnaire in which they commented on the program and rated various aspects of its implementation. They rated the equipment, books, and instructional materials as "average" to "good," and the curriculum in the technical and academic clases as "good." They noted that for the most part, the technical and academic curricula were not inter-related. Once the school year began, there were no formal staff orientations or in-service meetings to develop teamwork or reinforce the Academy philosophy and goals.

The teachers commented that the small class size was a plus in allowing them to provide extra help needed by students. They rated the program planning and management as "good," and the counseling program as well. However, they gave mixed responses regarding the degree of support for the program from school administrators and school counselors not directly involved in the Academy.

The teachers were not entirely satisfied with the student selection procedure used in 1985, but felt that the procedures had been improved for the selection of the students for the 1986-87 school year. They also said that the Academy had not yet established criteria for dropping students from the program who were disruptive and non-responsive.

According to the teachers, the weakest aspect of the HCA implementation was the lack of preparation and coordination time for teachers. The greatest strengths of the program were the dedication of the staff and the camaraderie

among the students--their positive attitudes and sense of identity within the larger school.

On a scale where 1 = Very Weak and 7 = Very Strong, the staff rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 6.75 |
| Implementation at HCA: | 3.88 |

Parent Participation and Reaction

According to the Academy teaching staff questionnaire responses, most of the parents supported their children's efforst in the HCA, even though they did not visit the school and were frequently difficult for teachers to contact.

Two sets of parents were asked to complete an evaluation form at the end of the school year. They rated the HCA as "good" to "excellent." Both parents noted that their children had become much more interested in school and in planning for the future as a result of the program. They said they had been kept only "moderately well" informed about Academy activities. According to these parents, the weakest aspects of the program were that it was not sufficiently difficult and that not enough teachers were involved. The aspect they liked best was the extra opportunity for students to prepare for careers in health.

Responses to Private Sector Questionnaire

No one from the supporting institutions completed the year-end private sector evaluation form. The Academy teachers commented that the guest speakers were outstanding. They also said that the health industry employees were very willing to cooperate, but that the HCA had not fully explored this resource.

Summary

The Kern High School District implemented an Academy program that closely followed the Peninsula Academies model in many respects. Its main shortcomings were:

- Lack of a common preparation period for teachers;
- Absence of a "headquarters" or lab dedicated to the HCA;
- Lack of inter-relationship between technical and academic curricula;
- Absence of private sector involvement at the policy-making level (e.g., steering committee meetings), although there was a strong involvement in providing guest speakers and field trip opportunities.

Both the participating students and the staff gave generally favorable ratings to the Academy program, and there appear to be some improvements in the students' attitudes and self-image as measured by the self-report questionnaire. However, no statistically significant differences between program and comparison group students were found on the key measures of attendance, retention, credits earned, and GPA.

## EDISON FINANCIAL ACADEMY, EDISON HIGH SCHOOL
## (Stockton Unified School District, Stockton)

Description and Implementation

The Edison Financial Academy (EFA) is located at Edison High School, an older facility in a low- and lower-middle income neighborhood of the city of Stockton. Edison High has an ethnically mixed student population of 2200: 38% Hispanic, 26% Asian/Pacific Islander, 21% Black, and 15% White. The two Academies which started in 1985 in the Stockton District (the EFA and the Franklin Food Service and Hospitality Academy) were separately administered, with no central district coordination.

Thirty tenth grade students entered the EFA in September 1985. No comparison group was identified. The EFA operated in tandem with the Edison Enterprise Project, a program serving students in grades 9, 11, and 12, funded by a state grant and the Industry Education Council. Both the EFA and Enterprise shared the goal of teaching business skills to underachieving, at-risk students. The school planned to gradually subsume the Enterprise program into the EFA over the next four years.

Two teachers were assigned full-time to teach business and mathematics in the EFA/Enterprise programs, and two others were assigned 3/5 time to teach English and social studies. The four teachers did not have an extra release period for Academy coordination. Their four adjacent classrooms were located in a remodeled wing of the high school. One of the school's vice principals acted as EFA director.

The Academy students were not block scheduled, so that all the Academy teachers had non-program as well as EFA students, and Academy students took many of their academic classes outside the program. (The Academy students took an average of 1.5 EFA classes each semester, usually Academy business and/or mathematics.)

The career focus of the EFA was on business and finance. The sponsoring financial institutions made suggestions for the curriculum, which included training in work attitudes and business orientation as well as in computing, record-keeping, and other technical skills. The major company sponsors were Great American First Savings Bank, American Savings and Loan Association, Union Safe Deposit Bank, Stockton Savings and Loan Association, Bank of America, the San Joaquin County Affirmative Action Office, and the City of Stockton.

## Program Impact

Student profile. Forty-three percent of the EFA students were female. The ethnic composition of the group was as follows:

| Ethnicity | Percent |
|---|---|
| White | 3% |
| Hispanic | 37% |
| Black | 50% |
| Asian | 10% |

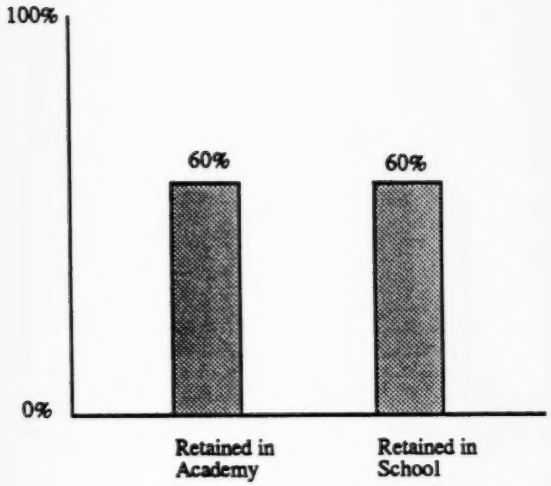
The following table shows the school performance of the Academy students during the 1984-85 school year, before they joined the EFA.

Attendance, Credits, and GPA, 1984-85 School Year
(Academy Students, N=28)

| % Days Attended | No. Credits Earned | GPA |
|---|---|---|
| 89.43% | 35.89 | 1.33 |

Enrollment and retention. The following graph shows the percent of students retained in the Academy program and the percent retained in school, including those who dropped out of the Academy during the school year.

Retention Rates, 1985-86 School Year
Academy Students




Most of the students who left the Academy (67%) did so because they were dropped by the school for non-attendance or expelled. The Academy planned to re-admit them to the program if and when they returned to school.

Attendance. The attendance rates for Academy students are compared to the students' own performance last year (1984-85). The attendance of those students who were present both fall and spring is also compared for the two semesters.

Attendance
(Percent Days Attended)

| | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| | 90.89% | 91.85% | 80.12% | 87.03% | - 3.86* |
| N | (19) | (20) | (20) | (19) | |

* Significant at the .05 level.

Credits. A comparison is made between the number of credits earned by the Academy students last year and this. The typical student at Edison High School must earn 60 credits per school year to stay on track for graduation.

Credits
(Average Number of Earned)

| | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Difference |
|---|---|---|---|---|---|
| | 39.72 | 22.63 | 19.21 | 43.61 | + 3.89 |
| N | (18) | (19) | (19) | (18) | |

Grades. Here again, the students' performance last year and this is compared.

Grades
(Average GPA)

| | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| | 1.42 | 1.47 | 1.21 | 1.41 | - .01 |
| N | (18) | (19) | (19) | (18) | |

## Responses to Student Questionnaire

A comparison of student responses to the incoming and year-end student questionnaires provides an indication of the influence of the Academy on career planning, attitudes toward school, and self-esteem. These responses are reported in this section, along with the students' ratings of some of the Academy's specific components and of the overall program.

Career planning. Four questionnaire items measured the students' progress in career planning. A summary of responses follows.

- Have a definite plan for what to do the first two years after high school graduation: pretest, 28%; posttest, 33%.
- Have a long-term career goal: pretest, 48%; posttest, 67%.

- Agree that it is important to gain job skills while in high school: pretest, 100%; posttest, 100%.

- Agree that becoming a success is not mainly a matter of luck, but is dependent on hard work: pretest, 48%; posttest, 58%.

Attitudes toward school. Incoming Academy students rated how well they had liked school the previous year, and then at the end of this school year, they rated how well they liked their year in the Academy.

- Found school "usually" or "very" interesting/liked school "quite a bit" or "very much": pretest, 40%; posttest, 58%.

- The school personnel associated with the EFA estimated that 30% of the students increased their interest in school and learning this year, 7% decreased interest, and 63% showed no change.

Attitudes toward self. At the end of the school year, the students were asked to estimate the change in their attitudes toward themselves, taking into consideration confidence about their abilities in school and in making friends.

- 66% of the students said they felt "much better" or "a little better" about themselves; 25% said there was no difference; and 8% said they felt "much worse" about themselves after a year in the Academy program.

- Agree that they would like to be someone different from themselves: pretest, 32%; posttest, 25%.

- The teachers estimated that about 39% of the students had increased their self-confidence and esteem during their year in the Academy; they could not estimate the percent who showed no change or decreased in self-esteem.

Student ratings of the Academy program. On the year-end questionnaire, students rated their contacts with the private sector, the Academy's equipment and instructional materials, extra help received with schoolwork, and the overall program.

- Contacts with private sector. The students reported they had one guest speaker and no field trips. The nine students who remembered hearing a guest speaker rated the experience as follows: Very helpful, 22%; Somewhat helpful, 44%; O.K., 22%; Not very helpful, 11%.

- Equipment and materials. Students rated the quality of equipment in their business classroom and of the books, films, and other instructional materials in their other Academy class(es). Responses were as follows:

| | Excellent | Good | Average | Poor | Terrible |
|---|---|---|---|---|---|
| Equipment | 8% | 42% | 42% | 8% | -- |
| Materials | 18% | 36% | 27% | 18% | -- |

- Extra help. An Academy should be designed to provide for special individualized assistance for students with academic problems.

  - At the end of the school year, 41% of the students reported that they "always" or "usually" received the extra help they needed; 17% said "sometimes," and 41% said they "occasionally" or "never" received this help.

  - The students reported that the most frequent sources of extra help were: the teacher of the class where the problem arose (42%), another student or friend (42%), and parents (33%).

- Overall rating of program. At the end of the school year, students rated how well they liked the Academy compared to the regular school program. On a scale of 1 to 5, where 1 = Much Better and 5 = Much Worse, they gave an average rating of 2.64. The ratings were distributed as follows:

| (1) Much Better | (2) Slightly Better | (3) Same | (4) Slightly Worse | (5) Much Worse |
|---|---|---|---|---|
| 18% | 18% | 55% | -- | 9% |

Comments on the student questionnaires indicated that many students were uncertain as to what the Academy was about or whether they were actually in such a program. One wrote "I don't have any Academy classes," and others wrote, "They need to improve how the system is run," and "It was confusing." The students' positive experiences in EFA were mainly related to acquiring job search skills and appropriate workplace behavior and skills (mentioned by 42%).

Responses to School Personnel Questionnaire

At the end of the school year, four teachers and the Academy Director completed a questionnaire in which they commented on the program and rated various aspects of its implementation.

The teachers gave positive ratings ("excellent" to "good") to the classroom facilities, equipment, materials, and curriculum for the EFA. They noted that there was some interrelationship between the business and mathematics classes, but that for the most part, the academic and business curricula were not integrated.

Planning and management of the program were rated as "poor." The respondents noted that the EFA Director was involved with other responsibilities and was not close enough to the program's day-to-day problems. The promise of an Academy structure, where students were scheduled into Academy-only classes and where teachers had time for cooperative planning, was never kept. Orientation to the program's philosophy and inservice training were rated as "poor," but the teachers noted that since most classes had mixed enrollments of Academy and non-Academy students (and sometimes the teachers were not sure which were which), it would have been difficult to implement special teaching strategies in any event.

The teachers rated the school administrators as "supportive" of the Academy, but the other teachers and school counselors as "non-supportive" or even "hostile." They rated the program's efforts to provide individual tutoring and extra help as only "fair," and the counseling for Academy students as "inadequate," except for that given informally by the teachers.

The teachers found the Academy's criteria and procedures for selecting students and its policy of not dropping unresponsive students unsatisfactory. They noted that too many students with serious discipline problems had been admitted, and they felt that this, combined with a policy of not dropping any students unless they were dropped by the school for poor attendance, led to disrupted classes and low morale.

The teachers were also critical of the components of the program that were to have provided motivational contacts with the private sector. They rated the cooperation of the local businesses as "somewhat effective," and noted that the Academy staff did not often call upon them. Only one speaker was scheduled and there were no field trips.

The school personnel said the primary problems or the EFA this year were:

- Lack of cohesiveness, unity, or sense of purpose, due to absence of a full program of academic and technical classes;
- Lack of communication between program participants--teachers, administration, school counselors, and parents;
- A student selection process that resulted in an inappropriate group.

Despite the incompleteness of the EFA program, the teachers found the following positive aspects:

- Small class size;
- A business class that gave students a goal and good career preparation.

Parent Participation and Reaction

According to the Academy teaching staff questionnaire responses, over half of the parents were not interested in the program and the others were only "somewhat supportive and interested." The teachers noted that they had not had much contact with the parents this year.

The parents of three Academy students completed a year-end evaluation questionnaire. Two rated the EFA as "good" to "excellent" and the third gave no rating. One parent said that his/her child was much more interested in school and learning since joining the Academy, and the other two were "not sure." However, all three felt their child made good progress in making career plans for after high school. Two parents said they had been kept "moderately well" informed both about their own child's progress and about the Academy program itself; the third parent did not respond to these items. These parents found the best feature of the program to be the job-related business curriculum.

Responses to Private Sector Questionnaire

Two private sector supporters of the EFA responded to the year-end evaluation questionnaire. They had participated by providing sample job applications, holding mock job interviews, serving as the classroom speaker, helping to design the business classroom, and serving on the advisory committee.

Both respondents indicated that they felt the Academy's curriculum would prepare students with skills needed by local businesses. They rated the guest speaker program as "somewhat useful" and "not useful" and noted that they hoped that the future would hold more in the way of field trips and staff development for the Academy instructors.

The private sector respondents noted the following weaknesses in the program:

- The small size of the program (possibly the result of under-funding) limited its effectiveness;
- The policy of non-dismissal of problem students led to poor motivation and to students not feeling accountable for their behavior.

They commented that, theoretically, the strength of the program would be in the mutual commitment of the school faculty and the community to teaching practical work skills along with basic academic skills. No ratings of the program's implementation were given.

Summary

This program was plagued with problems. Students were confused about the nature and even the existence of the program. The staff felt that most students did not improve their interest in school, rated the planning and management of the program as poor, felt that other teachers and counselors were nonsupportive or hostile, criticized the non-block scheduling of the students, felt that too many problem students were admitted to the program, and were cool toward the private sector components of the program.

It is, therefore, not surprising that this general lack of a coherent program failed to produce any beneficial effects on the outcome measures of attendance, retention, credits earned, and GPA. Not only was the percent of students retained (60%) low in comparison to other Academies, those who remained in the program had a statistically significant lower rate of attendance than during the previous year.

Clearly this program requires dramatic changes to succeed. It remains for the school and district administrators to focus on the specific shortcomings identified in this evaluation:

- Absence of block-scheduling of Academy students in the special academic classes;
- Lack of cohesiveness between Academy teachers, administration, and students;
- Near absence of contact between students and the business community;
- Lack of support from other teachers and counselors at the school;
- Infrequent and unstructured contact between Academy, staff, and parents.

## FRANKLIN FOOD SERVICES AND HOSPITALITY ACADEMY, BENJAMIN FRANKLIN HIGH SCHOOL (Stockton Unified School District, Stockton)

### Description and Implementation

The Food Services and Hospitality Academy (FSHA) is housed at a large comprehensive high school on the southern edge of the city of Stockton. The area is semi-rural, and the school serves a largely low-income community. Of the approximately 2100 students at Franklin High School, about one-third are Hispanic, one-third are White, and one-third are other minorities, mainly Blacks, Asians, and Pacific Islanders.

Thirty-six students entered the Academy in September 1985. Although about half of the group were academically ninth graders (not having earned enough credits last year), all but three were chronologically tenth graders. A comparison group of 20 students was identified from among the pool of eligible applicants to the program.

The Academy had one full-time teacher who taught a class in food service and restaurant management. She was assisted by a 2/3-time aide, and there was one teacher/administrator assigned one period daily to serve as the Academy director. The students attended one double-period Academy class each semester, and the rest of their classes were either in the school's regular program or in the Franklin Attendance Review Board (FARB), which operates a school-within-a-school for students with chronic attendance problems. The Academy and FARB were closely associated administratively. The Academy foods class was taught in a kitchen-laboratory classroom which was remodeled especially for the FSHA, with industry input. For most of the year, the students operated a restaurant, the A-1 Cafe, where they served lunch and snacks to Franklin students and faculty.

The main industry sponsors for the program were Ramada Inns, Stockton Hilton Hotel, Holiday Inn, Bunn's Catering, Alder Market Catering, and Giovannetti Catering. The catering companies were more involved than the

hotels this year, as the curriculum focused on food preparation and serving and will not include hotel management and operations until next year.

## Program Impact

Comparability of Academy and comparison students. The Academy's recruitment and selection process identified about 70 students at Franklin who were suitable for the Academy program. Forty were randomly selected to enter the program, and the rest were assigned to the comparison group. By the time school started in September, there were 36 Academy students and 20 comparison students. The Academy group was 47% female, and the comparison 39% female. The ethnic compositions of the two groups were:

| Ethnicity | Academy | Comparison |
|---|---|---|
| White | 39% | 33% |
| Hispanic | 31% | 50% |
| Black | 19% | 6% |
| Asian | 3% | 6% |
| other minority | 8% | 6% |

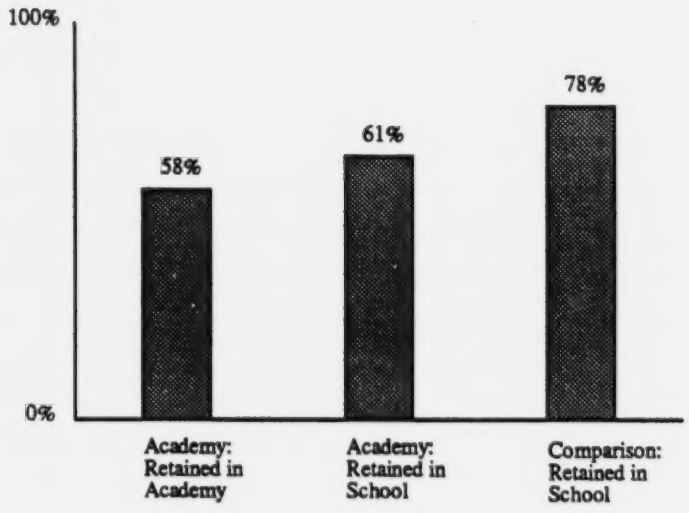
The following table shows the performance of the future Academy and comparison group students during the 1984-85 school year, before the FSHA program began. The differences between the groups were not statistically significant.

Attendance, Credits, and GPA, 1984-85 School Year
Academy and Comparison Students

| Group | N | % Days Attended | Number of Credits Earned | GPA |
|---|---|---|---|---|
| Academy | 36 | 71.22% | 33.79 | 1.15 |
| Comparison | 20 | 80.65% | 36.25 | 1.37 |
| Difference | | - 9.43 | - 2.46 | - .22 |

Enrollment and retention. The following graph shows the percent of students retained in the Academy program, retained in school (including those who dropped out of the Academy but remained in school), and the percent of comparison students retained in school.

Retention Rates, 1985-86 School Year
Academy and Comparison Students




Attendance. The attendance rates for Academy students are compared to the students' own attendance in ninth grade (1984-85) and to the attendance of the comparison students this school year (1985-86).

Attendance
(Percent Days Attended)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 76.04% | 73.78% | 70.13% | 78.11% | + 2.07 |
| N | (23) | (36) | (25) | (23) | |
| Comparison | 80.65% | 87.22% | 77.71% | 82.46% | + 1.81 |
| N | (20) | (18) | (16) | (16) | |
| Difference | - 4.61 | - 13.44 | - 7.58 | - 4.35 | + .26 |

(The full 1985-86 school year average rate is higher than that for either semester because it includes only those students present both semesters. See Technical Notes at the end of this report.)

Credits. Here again, comparisons are made between the credits earned by the Academy students last year and this, and by the Academy and comparison students this year. The typical student at Franklin High School must earn 60 credits per year to stay on track for graduation.

Credits
(Average Number of Credits)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 36.60 | 23.10 | 27.87 | 52.10 | + 15.50 |
| N | (25) | (29) | (27) | (25) | |
| Comparison | 36.25 | 22.19 | 16.84 | 40.25 | + 4.00 |
| N | (20) | (16) | (19) | (16) | |
| Difference | + .35 | + .91 | + 11.03 | + 11.85 | + 11.50* |

Grades. Again, the grades of Academy students last year and this are compared, as well as those of the Academy and comparison students this year.

Grades
(Average GPA)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 1.26 | 1.70 | 1.73 | 1.76 | + .50 |
| N | (25) | (29) | (27) | (25) | |
| Comparison | 1.37 | 1.59 | 1.36 | 1.54 | + .17 |
| N | (20) | (16) | (19) | (16) | |
| Difference | - .11 | + .11 | + .37 | + .22 | + .33 |

Responses to Student Questionnaire

A comparison of student responses to the incoming and year-end student questionnaires provides an indication of the influence of the Academy on career planning, attitudes toward school, and self-esteem. These responses

* Significant at the .01 level.

are reported in this section, along with the students' ratings of some of the Academy's specific components and of the overall program.

Career planning. Four questionnaire items measured the students' progress in making career plans:

- Have a definite plan for what to do the first two years after high school graduation: pretest, 22%; posttest, 24%.
- Have a long-term career goal: pretest, 67%; posttest, 60%.
- Agree that it is important to gain job skills while in high school: pretest, 96%; posttest, 95%.
- Agree that becoming a success is not mainly a matter of luck, but is dependent on hard work: pretest, 75%; posttest, 80%.

Attitudes toward school. Incoming Academy students rated how well they had liked school the previous year, and then at the end of this school year, they rated how well they liked their year in the Academy.

- Found school "usually" or "very" interesting/liked school "quite a bit" or "very much": pretest, 13%; posttest, 62%.
- The school personnel who completed a questionnaire estimated that 70% of the Academy students increased their interest in school and learning this year, 11% showed decreased interest, and 19% showed no change.

Attitudes toward self. At the end of the school year, the students were asked to estimate the change in their attitudes toward themselves, taking into consideration confidence about their abilities to make friends and to succeed in school.

- 75% of the students said they felt "much better" or "a little better" about themselves; 5% said they felt worse; 20% said there was no difference.
- Agree that they would like to be someone different from themselves: pretest, 35%; posttest, 30%.
- The school personnel estimated that 78% of the students had increased their self-confidence and esteem, 7% had decreased, and the rest had shown no change.

Student ratings of the Academy program. On the year-end questionnaire, students rated their contacts with the private sector, the Academy's equipment and instructional materials, extra help received with schoolwork, and the overall program.

- Contacts with private sector. The students reported an average of 11 guest speakers and 1 or 2 field trips this school year. They rated these experiences as follows:

| | Very Helpful | Somewhat Helpful | OK | Not Very Helpful | A Waste of Time |
|---|---|---|---|---|---|
| Guest speakers | 40% | 30% | 25% | -- | -- |
| Field trips | 24% | 47% | 29% | -- | -- |

- Equipment and materials. Students rated the quality of the equipment in their Academy kitchen/laboratory classroom and of the books, films, and other instructional materials. Their ratings were as follows:

| | Excellent | Good | Average | Poor | Terrible |
|---|---|---|---|---|---|
| Equipment | 33% | 24% | 33% | 10% | -- |
| Materials | 20% | 40% | 35% | 5% | -- |

- Extra help. An Academy should be structured to provide special individualized assistance for students with academic problems. The students were asked the extent to which this had been true for them.

  - At the end of the school year, 55% of the students reported that they "always" or "usually" received the extra help they needed; 15% said "sometimes," and 30% said they "occasionally" or "never" received this help.

  - The students reported that the most frequent sources of extra help were: the teacher of the class where the problem arose (43%), parents (33%), another student (29%), and another Academy teacher (29%).

- Overall rating of program. At the end of the school year, students rated how well they liked the Academy compared to the regular school program. On a scale of 1 to 5, where 1 = Much Better and 5 = Much Worse, they gave an average rating of 1.57. The ratings were distributed as follows:

| (1) Much Better | (2) Slightly Better | (3) Same | (4) Slightly Worse | (5) Much Worse |
|---|---|---|---|---|
| 57% | 29% | 14% | -- | -- |

The main complaint the students expressed about the Academy was that the space for the kitchen-classroom-restaurant was too small and crowded, a problem that was mentioned by 24% of the students. They reported that the things they liked best about the Academy program were learning to prepare new kinds of food (38%), working in the Academy restaurant, and generally improving in school (14%).

Responses to School Personnel Questionnaire

At the end of the school year, two teachers from the regular school program, a counselor, the career center coordinator, and the principal of Franklin High completed questionnaires in which they commented on the program and rated various aspects of its implementation. Their responses are summarized in this section.

The food services equipment, instructional materials, facilities, and curriculum were rated as "good," but it was noted that more input from the private sector would be desirable regarding course content. Cooperation and interactions with the private sector were called "somewhat" effective by four of the five respondents.

The Academy's planning and management were also rated as "good," and the school administrators were rated as "very supportive" of the program. The respondents noted that the non-Academy teachers and counselors were "somewhat" supportive, and that more effort needs to be made to inform the faculty of the goals and strategies of the FSHA.

According to the respondents, the weakest aspects of the Academy program this year were:

- Lack of an integrated core curriculum that included mathematics, English, and special tutoring among the Academy offerings;

- Cramped space for the foods classroom/restaurant.

The strengths of the program were the personal attention for the students and the high quality and commitment of those associated with the Academy.

On a scale where 1 = Very Weak and 7 = Very Strong, the school personnel rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 6.4 |
| Implementation at FSHA: | 5.6 |

Parent Participation and Reaction

According to the principal, counselor, and one teacher who responded to the school personnel questionnaire, the parents of Academy students were "somewhat" supportive and interested in the Academy.

The parents of four Academy students completed an evaluation form at the end of the school year. Three of them rated the FSHA as "excellent" and said their children had become "much" or "a little" more interested in school since joining the Academy. (The fourth parent was not sure or did not know how to respond to these items.) Two parents commented that the renewed interest in school applied only to the Academy class, not to the regular school program. Two also responded that their child was making good progress in planning for a future career or education, but one said this was not the case, and one didn't know. Three parents said they had been kept "very well" informed by the Academy staff about their child's performance in school; they had been kept "very" to "moderately" well informed about Academy activities.

The parents said that the main weakness of the program was that it did not include classes in English, math, or history, and they suggested that it should be expanded to do so. They also suggested that the Academy set up a system for receiving suggestions from parents and students.

The parents said that the best features of the program were the encouragement from the foods teacher, who awakened the students' interest, promoted self-assurance, and helped students "find their identity and confidence."

Responses to Private Sector Questionnaire

Four employees, representing four private sector supporters in the catering business, responded to the evaluation questionnaire. They had been involved this year as classroom speakers/demonstrators, field trip hosts, and members of the advisory board. Some of their responses to the questionnaire are summarized here.

- Ratings of field trips and guest speaker program. 75% rated the field trips and guest speaker program as "highly useful"; 25% rated the speakers as "somewhat" useful.

- Curriculum. One respondent said the curriculum would provide students with the skills needed by local private business; one said that it was "only a start," and the other two respondents were not knowledgeable about the curriculum.

- Attitudes and communications. None of the respondents had experienced a change of attitude toward the public schools as a result of involvement with the program. They rated the quality of communications between the Academy staff and the private sector supporters as "average" and commented that the advisory board had gotten off to a late, mid-year start and had not met frequently enough.

- Program weaknesses. The respondents noted that the Academy needs more involvement with business, more integration of the technical class with the academic classes, and a larger classroom space.

- Program strengths. The strong points of the FSHA were identified as the effective food services teacher and the interest of the business community.

On a scale where 1 = Very Weak and 7 = Very Strong, the private sector respondents rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 6.0 |
| Implementation at FSHA: | 5.3 |

Summary

The Academy model was only partially implemented at Franklin High this year. The one Academy class was taught with the individualized, supportive approach recommended by the model, but a true Academy depends on a full academic and technical program to build an integrated, effective school-within-a school. The same two weaknesses of the Academy were pointed out by each of the groups responding to the evaluation questionnaires. They were:

- Absence of an academic component--English, math, or science classes to augment and reinforce the technical class;
- Insufficient space in the "lab" classroom/kitchen.

The students who participated in this program gave it generally favorable ratings, as did the staff members who assessed it. But it had little effect on the students' career planning or on the outcomes of retention, attendance, and GPA. It did appear to have favorably affected the number of credits earned where the Academy students substantially outstripped the comparison group.

## EAST SIDE ELECTRONICS ACADEMIES, INDEPENDENCE HIGH SCHOOL
## (East Side Union High School District, San Jose)

Description and Implementation

The Academy at Independence High School is one of the two operated by the East Side District, which is located on the edge of the city of San Jose. Independence serves a multi-ethnic, middle class community. The student population is about 40% Hispanic, 30% White, 8% Black, and 22% Asian and other minorities. The school accommodates 4,000 students in four semi-autonomous "villas," each of which has its own principal.

The East Side Electronics Academies (ESEA) program is the largest of the Academy replications and the only one to start with ninth instead of tenth graders (a four-year program is planned). At Independence, 118 students enrolled in the Academy in September 1985. Because of the large size of this class, no new students will enter the ESEA until the 1987-88 school year. No comparison group was identified because nearly all eligible and interested students at Independence were enrolled in the ESEA.

The goal of the ESEA is to prepare students for entry-level careers in electronics technology, assembly, and other areas of electronics and computer manufacture. The program was centrally coordinated at the district level, where the ESEA director and industry liaison coordinator were located. At Independence, there were four full-time Academy teachers, each of whom taught four classes and had two preparation periods. Another teacher was assigned two periods to serve as Academy counselor and department chair. All the students took Academy mathematics, science, English, and electronics each semester, plus their regular program classes. The ESEA academic classrooms were located around a small patio, and the electronics laborabory was in an adjacent building.

The ESEA had numerous sponsoring companies, the most active of which were IBM, Hewlett-Packard, Versatec, Measurex, Altos Computer Systems, Activision, and Advanced Micro Devices. A cooperative business-school operating committee met monthly, and a curriculum advisory group worked with the teachers. The

sponsoring industries donated furniture and electronics equipment, but their major contribution was employee time.

Program Impact

Student profile. Forty percent of the entering students were female. The ethnic composition of the group was:

| Ethnicity | Academy |
|---|---|
| White | 36% |
| Hispanic | 40% |
| Black | 10% |
| Asian | 10% |
| Other minority | 3% |

The following table shows the performance of the future Academy students during the 1984-85 school year, when they were in eighth grade.

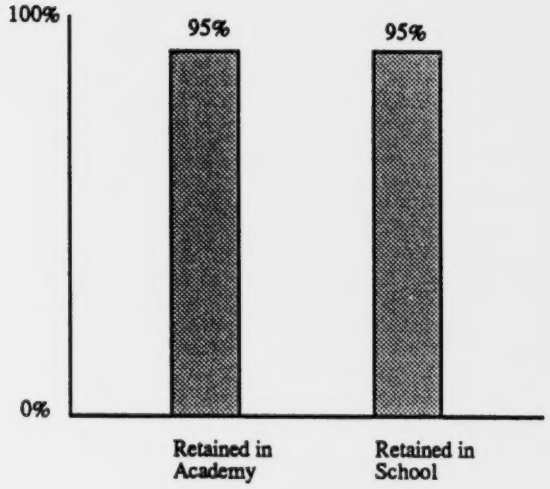
Credits and GPA, 1984-85 School Year
(N=98)

| Estimated Credits Earned* | GPA |
|---|---|
| 57.76 | 2.59 |

(*Credits were reported for one semester only; this figure represents double the reported credits.)

Enrollment and retention. The following graph shows the percent of students retained in the Academy program and the percent who were retained in school, including those who dropped out of the program during the year.

Retention Rates, 1985-86 School Year
Academy Students




Attendance. Attendance data on the Academy students for the 1984-85 school year were not reported because it was not possible to collect comparable data from the ten junior high schools, located in three different school districts, from which the Academy students came. Therefore (and in the absence of a comparison group), there is no standard by which to gauge whether or not the ESEA made an impact on student attendance. The attendance rates for the 1985-86 school year were as follows:

Attendance
(Percent Days Attended)
(N=109)

| Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year |
|---|---|---|
| 96.07% | 91.93% | 94.02% |

Credits. Comparisons are made between the credits earned by the Academy students last year and this, and between credits earned during fall and spring semesters this year. It should be kept in mind that the comparison between achievement in junior high and senior high school may not be a valid one and may tend to undervalue high school achievement.

Credits
(Average Number of Credits)

| | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| | 57.76* | 28.51 | 26.80 | 56.79 | - .97* |
| N | (98) | (111) | (111) | (98) | |

(*Credits were reported for one semester only; this figure represents double the reported credits.)

Grades. Again, comparisons are made between the grades of the Academy students last year and this, and between their grades in the fall and spring semesters of this school year.

Grades
(Average GPA)

| | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| | 2.60 | 2.25 | 2.16 | 2.20 | - .40* |
| N | (96) | (111) | (111) | (96) | |

Responses to Student Questionnaire

A comparison of student responses to the incoming and year-end student questionnaires provides an indication of the influence of the Academy on career planning, attitudes toward school, and self-esteem. These responses are reported in this section, along with the students' ratings of some of the Academy's specific components and of the overall program.

Career planning. Four questionnaire items measured the students' progress in making career plans. A summary of responses follows:

- Have a definite plan for what to do the first two years after high school graduation: pretest, 38%; posttest, 19%.
- Have a long-term career goal: pretest, 72%; posttest, 58%.

* Significant at the .01 level.

- Agree that it is important to gain job skills while in high school: pretest, 95%; posttest, 99%.

- Agree that becoming a success is not mainly a matter of luck, but is dependent on hard work: pretest, 88%; posttest, 78%.

Attitudes toward school. Incoming Academy students rated how well they had liked school the previous year, and then at the end of this school year, they rated how well they liked their year in the Academy.

- Found school "usually" or "very" interesting/liked school "quite a bit" or "very much": pretest, 36%; posttest, 67%.

- The teaching staff estimated that about 57% of the students increased their interest in school and learning this year, 9% had decreased interest, and 34% showed no change.

Attitudes toward self. At the end of the school year, the students were asked to estimate the change in their attitudes toward themselves, taking into consideration confidence about their abilities in school and in making friends.

- 80% of the students said they felt "much better" or "a little better" about themselves; 2% said they felt "much worse"; and 18% said they felt no differently.

- Agree that they would like to be someone different from themselves: pretest, 33%; posttest, 34%.

- The teaching staff estimated that 54% of the students had increased their self-confidence and esteem, and the remaining 38% had shown no change.

Student ratings of the Academy program. On the year-end questionnaire, students rated their contacts with the private sector, the Academy's equipment and instructional materials, extra help received with schoolwork, and the overall program.

- Contacts with private sector. The students reported an average of 12 guest speakers and 8 or 9 field trips to local companies this school year. They rated these experiences as follows:

| | Very Helpful | Somewhat Helpful | OK | Not Very Helpful | A Waste of Time |
|---|---|---|---|---|---|
| Guest speakers | 38% | 46% | 17% | -- | -- |
| Field trips | 48% | 33% | 18% | 1% | -- |

- Equipment and materials. Students rated the quality of the equipment in their electronics laboratory classroom and of the books, kits, films, and other instructional materials in their academic and technical classrooms. Responses were as follows:

| | Excellent | Good | Average | Poor | Terrible |
|---|---|---|---|---|---|
| Equipment | 24% | 61% | 13% | 13% | 2% |
| Materials | 34% | 54% | 10% | 2% | -- |

- Extra help. An Academy should be designed to provide for special individualized assistance for students with academic problems.

  At the end of the school year, 43% of the students reported that they "always" or "usually" received the extra help they needed; 34% said "sometimes," and 23% said they "occasionally" or "never" received this help.

  The students reported that their most frequent sources of extra help were: another student or friend (59%), the teacher of the class where the problem arose (57%), parents (57%), and another Academy teacher (18%).

- Overall rating of program. At the end of the school year, students rated how well they liked the Academy compared to the regular school program. On a scale of 1 to 5, where 1 = Much Better and 5 = Much Worse, they gave an average rating of 1.49. The ratings were distributed as follows:

| (1) Much Better | (2) Slightly Better | (3) Same | (4) Slightly Worse | (5) Much Worse |
|---|---|---|---|---|
| 64% | 24% | 11% | 1% | -- |

The main problems students reported having during their year in the Academy involved poor study habits and poor grades (18%) and difficulties getting used to the Academy schedule and structure (15%). Their best experiences were the field trips and guest speakers (33%), learning more and getting better grades (18%), experiencing personal growth in the area of self-confidence and social relationships (17%), and learning electronics (15%).

Responses to School Personnel Questionnaire

At the end of the school year, ten people completed the school personnel questionnaire--the four Academy teachers, the Academy counselor/department chair, two non-Academy teachers, one school counselor, one instructional aide,

and the associate principal. They commented on the program and rated various aspects of its implementation. Their responses are summarized here.

The classroom facilities were rated as "excellent," and the equipment as "good," although a need was noted for a larger and better equipped science laboratory and more sophisticated electronics equipment and computer software. The respondents rated the curriculum, technical and academic, as "good" to "excellent," but all agreed that few units were integrated and that curriculum development work was needed. Opinion was divided on whether students received the extra help and tutoring they needed, but there was agreement that the counseling program was "excellent."

The school personnel rated the planning and management of the ESEA as "good," or about "average" for a new program. However, they noted that there had been no staff orientation to the Academy philosophy nor opportunity to work on motivational strategies. The communications between the district and the school ESEA staff also needed improvement. The teachers were satisfied with the Academy's student selection procedures, but not with the procedures for dropping students from the program.

The involvement and cooperation of the private sector were rated as "effective" and the field trips, speakers, and other aspects of the career information component were rated as "very useful" by all the respondents.

There was no consensus among these respondents regarding the major problems of the Independence Academy this year. A variety of concerns were raised, including the lack of an integrated academic-technical curriculum, not enough tutoring, and not having social studies as part of the program. The strengths of the program were seen as: the four-period block schedule which allowed for flexibility in curriculum and scheduling, the enthusiasm of most of the students, and the commitment and cooperation of the teachers.

On a scale where 1 = Very Weak and 7 = Very Strong, the staff rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 6.63 |
| Implementation at ESEA, Independence: | 5.50 |

Parent Participation and Reaction

According to the Independence school personnel, most parents of Academy students were "very supportive" and interested in the program. Teachers felt they had an "open dialogue" with the parents, which worked well.

The parents of 43 Academy students completed an evaluation form at the end of the school year. Forty-two percent rated the program as "excellent," 49% as "good," 5% as "average," and 5% did not know. Seventy-four percent said they had noted a change in their child's attitude toward school during the year, and all of these said the child was "much" or "a little more interested" in school than before. Regarding career planning, 58% of the parents said their child was making good progress and 16% said this was not the case. The rest were not sure. The parents were very pleased with the extent of information they received from the Academy staff. Ninety-three percent said they were "very well" or "moderately well" informed about their own child's progress (and 7% responded "poorly" or "not at all"), and 97% were "very" or "moderately" well informed about the Academy's special activities.

Indicative of their interest in the program, this group of parents had a number of suggestions and comments to make. Among them were:

- Arrange for more frequent progress reports and parent conferences, especially for the average student who is not having problems;
- Include more study time and extra tutoring;
- Consider rotating the teaching staff, so that students don't have the same four teachers for four years;
- Work on improving the reputation of the ESEA on campus, so that students are not labeled as remedial or potential dropouts.

The aspects of the Academy that the parents liked best were: the small-school environment where teachers and students know and help one another and where creativity is fostered through personalized instruction (47%); the practical, career focus, including the field trips and speakers, and eventual summer jobs (30%).

Responses to Private Sector Questionnaire

The private Sector Questionnaire was completed by 13 individuals from six different supporting companies (Altos Computer Systems, Hewlett-Packard, IBM, Advanced Micro Devices, Measurex, and Versatec). Their involvement included serving on the steering committee; coordinating tours; providing guest speakers; donating equipment, materials, and furniture; advising on curriculum; providing opportunities for teachers to "shadow" employees during the summer; providing staff development training for teachers; recruiting mentors for the 1986-87 school year; designing and printing a brochure for the ESEA; and loaning rooms for meetings.

The private sector respondents rated and reacted to various components of the ESEA both at Independence and Silver Creek High Schools and rated the overall program. Their responses are summarized here.

- Ratings of field trips and guest speaker program. The field trips were rated as "highly useful" and the school presentations as "somewhat" to "highly" useful.

- Curriculum. All the respondents said that they believed that the curriculum of the ESEA would provide students with the skills needed by local businesses, but they qualified this response by noting that the curriculum is still developing and that most students will need some postsecondary training to meet industry's changing needs in the field of electronics.

- Communications. School-business communications were rated as "good" to "excellent." These respondents would like to continue to receive feedback on what the schools need from industry, including which classroom materials were most useful and well received. They would also like to receive letters directly from students and teachers regarding the students' performance.

According to these company supporters, the main weaknesses of the ESEA were that the program attempted to serve too many students, that more resources were needed, and more personal contacts were needed from industry. They also noted that strategies should be developed to motivate the low-achieving students and build esprit de corps among teachers and students. They named as the program's strengths the dedicated staff at all levels, the good working relationship with industry, and motivation for students that comes from tying in schoolwork with "real life."

On a scale where 1 = Very Weak and 7 = Very Strong, the private sector representatives rated the ESEA (at Silver creek as well as Independence) as follows:

| | |
|---|---|
| Academy concept: | 5.8 |
| Implementation at ESEA: | 5.2 |

Summary

The ESEA followed the Academy model closely in terms of class schedule, teacher release time, and industry involvement. It differed sharply from the model in its large size and in serving ninth instead of tenth graders in the first year. The main shortcomings of the ESEA at Independence were:

- The large number of students led to difficulties for industry in supplying needed resources;
- Not enough extra help and tutoring for students;
- Need for more integration of academic and technical curriculum.

The impact of the program on student performance was difficult to measure because the pre-treatment data were from the junior high school system, which may have different standards from the high school. The Independence ESEA students earned statistically significant fewer credits and lower grades than they did in eighth grade. There was a high retention rate in the Academy and also a high daily attendance rate that compared favorably with the other Academy replications. (See Chapter II.) The students earned enough credits to stay on track for graduation.

Despite the active program of guest speakers, field trips, and other contacts with industry, the Academy students did not show improvement in career planning. This may be because the incoming students had unrealistic career goals (one student wrote on the pretest that her goal was to become a "long-haul truck driver, doctor, or veterinarian"), which they reevaluated during this year of exposure to the real working world and serious career planning.

The commitment and cooperation of the ESEA Independence staff and their good communications with parents brought about a positive, small-school atmosphere in the Academy. The result was an improvement in the students' attitudes toward school and self.

## COMPUTECH ACADEMY, MOUNTAIN VIEW HIGH SCHOOL

**(Mountain View-Los Altos Union High School District, Mountain View)**

### Description and Implementation

The Computech Academy is located in a large suburban high school and draws on students from the two comprehensive high schools in the district. Minority students make up about 26% of the district's student population.

The Academy's career emphasis is on computer operations and repair, and it admitted 26 tenth graders in September 1985. No comparison group was identified.

Computech students were block scheduled into their four Academy courses (students took an average of 3.8 Academy classes each semester), which were taught by the following staff: a 2/5-time math and science teacher, a 1/4-time English teacher, and a 2/5-time computer literacy teacher who also acted as program coordinator. All four Academy classes were held in the same room. There was no extra release period for teachers beyond their regular preparation period, due largely to the parttime status of the Academy teachers.

Private sector cooperation was coordinated through the Stanford Mid-Peninsula Urban Coalition, one of the originators of the Peninsula Academies program. Among the industries supporting the Computech Academy were Hewlett-Packard Company; Lockheed Missiles and Space Company; Coherent, Inc.; Raytheon, Inc.; Tamtron; and GTE Government Systems.

### Program Impact

Student profile. Twenty-three percent of the entering sophomore Computech class was female; 69% of the students were White, 19% Black, 8% Hispanic, and 4% were Asian.

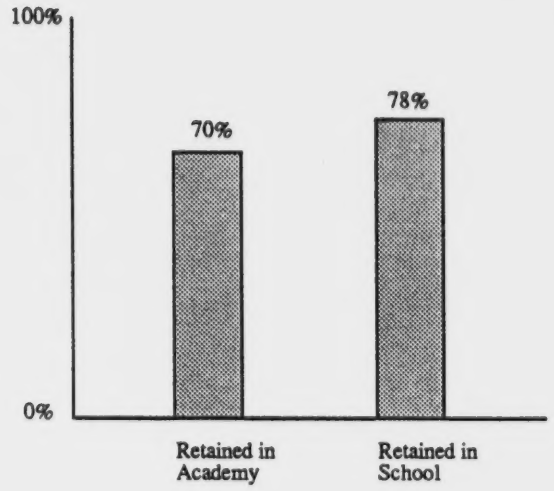
The following table shows the performance of the future Academy students in the 1984-85 school year, before the Computech Academy began.

Attendance, Credits, and Grades, 1984-85 School Year
(N = 27)

| % Days Attended | Number of Credits Earned | GPA |
|---|---|---|
| 95.17% | 38.43 | 1.67 |

Enrollment and retention. The following figure shows the percent of students retained in the Academy program this year and the percent who were retained in school, including those who dropped out of the Academy.

Retention Rates, 1985-86 School Year
Academy Students




Attendance. The attendance rates for Academy students are compared to their own attendance in ninth grade (1984-85) in the table that follows.

Attendance
(Percent Days Attended)

| | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| | 96.17% | 96.01% | 96.13% | 96.08% | - .09 |
| N | (18) | (18) | (18) | (18) | |

Credits. Here again, comparisons are made between the credits earned by the Academy students last year and this. The typical student at Mountain View High must earn 52 to 54 credits per year to stay on track for graduation.

Credits
(Average Number of Earned)

| | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| | 43.72 | 27.64 | 25.97 | 53.61 | + 9.89* |
| N | (18) | (18) | (18) | (18) | |

Grades. Again, the grades of Academy students last year and this are compared.

Grades
(Average GPA)

| | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| | 1.79 | 2.97 | 2.66 | 2.86 | + 1.07* |
| N | (16) | (18) | (18) | (16) | |

Responses to Student Questionnaire

A comparison of student responses to the incoming and year-end student questionnaires provides an indication of the influence of the Academy on career planning, attitudes toward school, and self-esteem. Unfortunately, due to a clerical error, only half of the student post-program questionnaire was administered at Computech. Nevertheless, some of the student's responses are reported in this section, including their ratings of some of the components of the program. Their rating of the overall program is missing.

* Significant at the .01 level.

Career planning. Two items were completed that measured student progress in career planning:

- Have a definite plan for what to do the first two years after high school graduation: pretest, 18%; posttest, 44%.
- Have a long-term career goal: pretest, 52%; posttest, 56%.

Attitudes toward school. Unfortunately, the post-program questionnaire items dealing with attitude toward school were not administered. On the pretest, 49% said they liked school "very little" or "not very much" the previous year, and only 22% said they liked school "quite a bit." The three school personnel who completed the year-end evaluation questionnaire estimated that about 85% of the Academy students increased their interest in school and learning this year, and the rest showed no change.

Attitudes toward self. The relevant post-program questionnaire items were not administered. The school personnel estimated that about 65% of the students increased their self-esteem through the influence of the Academy, 5% decreased in self-esteem, and the rest showed no change.

Student ratings of the Academy program. On the year-end questionnaire, students were to have rated contacts with the private sector, equipment, materials, and facilities of the Academy, and the overall Academy program. However, only the questionnaire items regarding guest speakers were administered.

- Guest speakers. Students reported hearing an average of 7 or 8 guest speakers during the school year. They rated the helpfulness of the speakers as follows:

| Very Helpful | Somewhat Helpful | OK | Not Very Helpful | A Waste of Time |
|---|---|---|---|---|
| 56% | 28% | 11% | -- | 6% |

Responses to School Personnel Questionnaire

Two Computech teachers and one school administrator completed the year-end questionnaire on the program, rating various aspects of its implementation.

They rated the facilities and equipment as "average" to "good," but noted that more microcomputers and more space were needed. Instructional materials were rated as "good" to "excellent," as was the curriculum. They noted that the philosophy of the program was reinforced in all the classes, but that more work was needed to develop a truly integrated academic and technical curriculum.

The respondents were most concerned about the management of the program, which they said suffered because of lack of time for effective planning. They also noted that the school administration was not strongly supportive of the program, and that the Academy did not receive much help this year from the private sector, either. (Private sector interaction and cooperation was rated as "somewhat effective" by one respondent, "not very effective" by another, and the third did not comment.)

The Computech efforts at providing individual tutoring were considered satisfactory, as was the counseling program. The respondents also approved of the current criteria and procedures for selecting students and for dropping those who are not responsive. (The policy at Computech was not to drop any students from the program unless they requested to leave it.)

The school personnel mentioned the following as the main weakness of Computech:

- Absence of the extra preparation period needed for effective planning by teachers;
- Insufficient support and assistance at the management level;
- Insufficient industry involvement.

The strengths of the program were the high quality teachers, their cooperation with one another, and the esprit de corps that developed among the students.

Using a scale where 1 = Very Weak and 7 = Very Strong, the school personnel rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 5.33 |
| Implementation at Computech: | 4.67 |

## Parent Participation and Reaction

According to the Academy teachers, about 75% of the parents were very supportive of the program, 10% showed no interest at all, and the rest were in between.

The parents of two Computech students completed an evaluation form. They rated the program as "excellent," and both noted that their children had become "much more interested in school" since joining the program. One also said the student had made progress in planning for the future, but the other was not sure. Both parents said they had been kept "moderately well" informed about their children's school performance and about the Academy activities. They mentioned no problem areas, and noted that the best features of the program were that it motivated an interest in learning, and that students were allowed to work at their own pace, which built self-confidence.

## Responses to Private Sector Questionnaire

One private sector representative from Coherent, Inc., and the Director of Educational Programs at the Stanford Mid-Peninsula Urban Coalition who coordinated private sector involvement for Computech, completed the end-of-year questionnaire. The private sector employee had served as a member of the curriculum advisory committee, and Coherent had provided microcomputer equipment to the Academy. The comments of these two respondents are summarized here.

- Private sector involvement at classroom level. This year most interaction was through the Urban Coalition; next year, when the mentor program begins, there will be more contact with the school. The field trips and guest speakers this year were rated as "highly useful."

- Curriculum. The private sector provided input on the curriculum, but these respondents felt the program was too new to judge its effectiveness. One noted that the Academy approach was to concentrate first on basic skills, and later on technical skills.

- Program weaknesses were named as: lack of involvement on the part of the school administrators; insufficient support at the district level; a technical curriculum has not yet been

developed; teachers did not have sufficient planning time; uncertain industry support.

- The greatest strengths of the Academy program were the rapport between the students and the teachers that resulted from small class size, block scheduling, and the commitment of the teachers.

On a scale where 1 = Very Weak and 7 = Very Strong, the two respondents representing the private sector rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 6.0 |
| Implementation at Computech: | 5.0 |

Summary

The Computech Academy followed the Academy model closely, with the exception of providing teachers an additional preparation period, a feature made difficult by their parttime status. The main shortcomings of the program were:

- Insufficient time for teachers to coordinate their activities;
- Uncertainty about level of administrative and industry support;
- A shortage of microcomputers in the classroom;
- Under-developed technical curriculum.

The impact of the program was difficult to measure, given the small number of students, and the absence of a comparison group and of student post-treatment questionnaire data. Attrition from the program, due mainly to students moving away or requesting to transfer out of the Academy, was quite high compared to the other Academy replication sites (see Chapter II). Students' attendance was good, although it was not significantly different from their pre-Academy attendance. The students did make impressive gains in the number of credits earned and GPA. The Academy had an active guest speaker program, and the students appeared to have made gains in their career planning.

These results are encouraging, but any firm conclusions will have to await a future evaluation with more participants, a comparison group, and the collection of full pre- post-questionnaire data.

## THE HEALTH ACADEMY, OAKLAND TECHNICAL HIGH SCHOOL
## (Oakland Unified School District, Oakland)

### Description and Implementation

The Health Academy (HA) is located at Oakland Technical High School, a recently remodeled inner-city school with approximately 1550 students. Over 96% of the students are from minority groups, and most come from low-income families.

Forty-one students were admitted to the program in September 1985. Seven of these students were high-achieving students interested in health careers, who were selected to serve as "academic mentors" or role models to the remaining 34 Academy students, who were "at risk" academically. A comparison group of 41 students was also identified on the basis of counselor recommendations and standardized test scores.

The Academy focus is on health science skills, including personal health education, first aid, and CPR, leading to careers in medical and laboratory technology, nursing, and emergency health services. All the students, except for the "academic mentors," took four Academy classes each semester. The staff consisted of one full-time English teacher, who also served as program director, and three parttime teachers who taught mathematics, science, and the health laboratory. Renovations were begun on a large classroom to serve as the Academy laboratory classroom, but the room was not completed for occupancy during the school year, so that the HA had no "headquarters" or central office.

The HA's major sponsors from the community included Merritt-Peralta Hospital, the Children's Hospital Medical Center, Oakland Kaiser Permanente Medical Center, Alta Bates Hospital, and the University of California Cowell Hospital.

### Program Impact

Comparability of Academy and comparison students. The Academy student body, including the group of "academic mentors," was 66% female, and the

comparison group was 63% female. The ethnic compositions of the two groups were:

| Ethnicity | Academy | Comparison |
|---|---|---|
| White | 12% | 0 |
| Hispanic | 0 | 2% |
| Black | 68% | 84% |
| Asian | 17% | 0 |
| Other minority | 2% | 2% |
| Unknown | 0 | 12% |

The following table shows the performance of the future Academy and comparison group students during the 1984-85 school year, before the HA program began. The designation "Academy A" refers to the entire group of Academy students, including the "academic mentors," and "Academy B" excludes these students.

Attendance, Credits, and GPA, 1984-85 School Year
Academy and Comparison Students

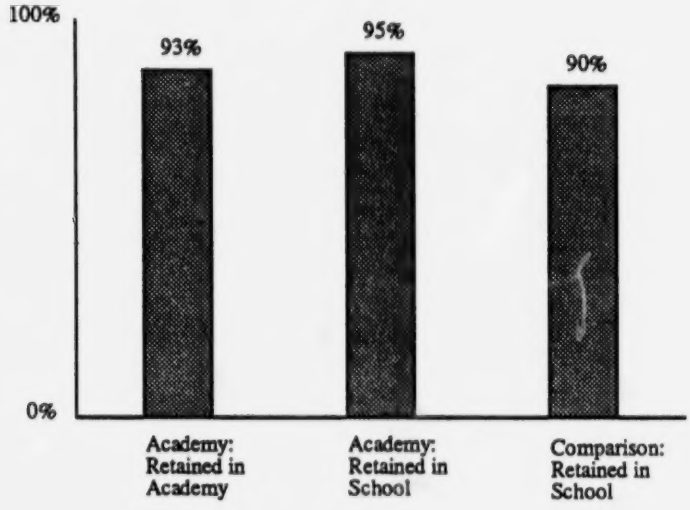
| Group/N | % Days Attended | Number of Credits Earned | GPA |
|---|---|---|---|
| Academy A | 91.00% | 5.48 | 2.01 |
| N | (22) | (41) | (41) |
| Academy B | 91.00% | 5.37 | 1.75 |
| N | (22) | (34) | (34) |
| Comparison | 93.04% | 5.55 | 2.11 |
| N | (23) | (38) | (38) |

There were no significant differences between the comparison students and the Academy A group including student "mentors." Without these good students, however, the Academy B group's average GPA was significantly lower than that of the comparison group ($p < .01$) Preliminary analyses of program impact showed no significant differences between the achievement of the Academy students in 1985-86 with and without the "academic mentors." Therefore, in the analyses that follow, all the comparisons are made using the entire Academy group.

Enrollment and retention. The following figure shows the percent of students retained in the Academy program, retained in school (including those

who dropped out of the Academy but remained in school), and the percent of comparison students retained in school.

Retention Rates, 1985-86 School Year
Academy and Comparison Students




Attendance. The attendance rates for Academy students are compared to the students' own attendance in ninth grade (1984-85) and to the attendance of the comparison students this school year (1985-86).

Attendance
(Percent Days Attended)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 91.58% | 95.98% | 96.39% | 96.45% | + 4.87 |
| N | (19) | (41) | (40) | (38) | |
| Comparison | 93.04% | 90.51% | 82.19% | 87.29% | - 5.75 |
| N | (23) | (37) | (35) | (34) | |
| Difference | - 1.46 | + 5.47 | + 14.20 | + 9.16 | + 10.62* |

Credits. Here again, comparisons are made between the credits earned by the Academy students last year and this, and by the Academy and comparison

* Significant at the .01 level.

students this year. The typical student at Oakland Technical High must earn 5 credits per year to stay on track for graduation.

Credits
(Average Number of Credits)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 5.47 | 3.23 | 3.23 | 6.50 | + 1.03 |
| N | (31) | (39) | (40) | (38) | |
| Comparison | 5.55 | 1.74 | 1.67 | 3.49 | - 2.06 |
| N | (38) | (38) | (35) | (35) | |
| Difference | - .08 | + 1.49 | + 1.56 | + 3.01 | + 3.09* |

Grades. Again, the grades of Academy students last year and this are compared, as well as those of the Academy and comparison students this year.

Grades
(Average GPA)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 1.81 | 2.36 | 2.44 | 2.40 | + .59 |
| N | (31) | (39) | (40) | (38) | |
| Comparison | 2.11 | 1.00 | 0.97 | 1.01 | - 1.10 |
| N | (38) | (38) | (35) | (35) | |
| Difference | - .30 | + 1.36 | + 1.47 | + 1.39 | + 1.69* |

Responses to Student Questionnaire

A comparison of student responses to the incoming and year-end student questionnaires provides an indication of the influence of the Academy on career planning, attitudes toward school, and self-esteem. These responses are reported in this section, along with the students' ratings of some of the Academy's specific components and of the overall program.

* Significant at the .01 level.

Career planning. Four questionnaire items measured the students' progress in career planning. Their responses were as follows:

- Have a definite plan for what to do the first two years after high school graduation: pretest, 48%; posttest, 36%.
- Have a long-term career goal: pretest, 85%; posttest, 71%.
- Agree that it is important to gain job skills while in high school: pretest, 96%; posttest, 96%.
- Agree that becoming a success is not mainly a matter of luck, but is dependent on hard work: pretest, 88%; posttest, 76%.

Attitudes toward school. Incoming Academy students rated how well they had liked school the previous year, and then at the end of this school year, they rated how well they liked their year in the Academy.

- Found school "usually" or "very" interesting/liked school "quite a bit" or "very much": pretest, 56%; posttest, 92%.
- The school personnel estimated that 86% of the Academy students showed increased interest in school and learning this year, and the remaining 14% showed no change.

Attitudes toward self. At the end of the school year, the students were asked to estimate the change in their attitudes toward themselves, taking into consideration their confidence about their abilities in school and in making friends.

- 83% of the students said they felt "much better" or "a little better" about themselves; 17% said they felt no differently.
- Agree that they would like to be someone different from themselves: pretest, 29%; posttest, 27%.
- The school personnel estimated that 97% of the Academy students had increased their self-confidence and esteem, and the remaining 3% had shown no change.

Student ratings of the Academy program. On the year-end questionnaire, students rated their contacts with the private sector, the Academy's equipment and instructional materials, extra help received with schoolwork, and the overall program.

- Contacts with private sector. The students reported an average of about 35 guest speakers this school year and 5 or 6 field trips. They rated these experiences as follows:

| | Very Helpful | Somewhat Helpful | OK | Not Very Helpful | A Waste of Time |
|---|---|---|---|---|---|
| Guest speakers | 52% | 36% | 12% | -- | -- |
| Field trips | 72% | 16% | 12% | -- | -- |

- Equipment and materials. Students rated the quality of the equipment in their health laboratory classroom and of the books, kits, films, and other instructional materials in their academic and technical classrooms. Responses were as follows:

| | Excellent | Good | Average | Poor | Terrible |
|---|---|---|---|---|---|
| Equipment | 24% | 56% | 16% | 4% | -- |
| Materials | 28% | 52% | 20% | -- | -- |

- Extra help. An Academy should be designed to provide for special individualized assistance with academic problems.
  - At the end of the school year, 70% of the students reported that they "always" or "usually" received the extra help they needed; 17% said "sometimes," and 13% said "occasionally."
  - The students reported that the most frequent sources of extra help with schoolwork were: the teacher of the class where the problem arose (83%), another Academy teacher (83%), another student or friend (42%),and parents (25%).

- Overall rating of program. At the end of the school year, students rated how well they liked the Academy compared to the regular school program. On a scale of 1 to 5, where 1 = Much Better and 5 = Much Worse, they gave an average rating of 1.23. The ratings were distributed as follows:

| (1) Much Better | (2) Slightly Better | (3) Same | (4) Slightly Worse | (5) Much Worse |
|---|---|---|---|---|
| 82% | 14% | 5% | -- | -- |

About half the students at the Health Academy mentioned one major problem with the program this year: not having the special classroom they were promised. Few other problems were mentioned on the post-program questionnaire. The aspects of the program that the students said they liked the best were:

the help and encouragement they received from the teachers (23%); the guest speakers and field trips (18% each); and getting better grades (18%).

Responses to School Personnel Questionnaire

At the end of the school year, two Academy teachers, one counselor, and the school principal completed a questionnaire in which they commented on the program and rated various aspects of its implementation.

The teachers rated the equipment, instructional materials, and the classroom facilities as "excellent" to "good," although they noted that it was a handicap having to share the health laboratory classroom with another program. The curriculum, too, was rated as "excellent" to "good," and most of the units in the academic and technical classes were said to be interrelated.

The teachers met regularly to discuss the students' progress, but there was little extra time for planning during the school year or for meeting before the year began to clarify the Academy's guidelines and objectives. However, the school personnel rated the Academy's planning and management as "excellent." Teachers, counselors, and administrators in the regular program at Oakland Tech were "very supportive" of the HA.

All respondents agreed that the students received the extra help they needed with school work and also that the counseling program for the Academy was "excellent." They were also satisfied with the program's criteria for selecting students and for dropping non-responsive students.

The school personnel listed the following as the main weaknesses of the program:

- Lack of sufficient time for meeting and planning;
- Lack of a "home" classroom at the school.

They named as the greatest strengths of the program:

- Student-teacher rapport and student camaraderie;

- Personal attention and motivation teachers offer to students;
- The community contacts which raised the students' awareness of career opportunities.

Parent Participation and Reaction

No year-end parent questionnaires were submitted. The school personnel rated the parents as "very supportive and interested" in the Academy.

Responses to Private Sector Questionnaire

No year-end questionnaires were received from the private sector supporters. The school personnel rated the cooperation and interaction between the private sector and the Academy as "very effective." Many guest speakers and demonstrations were arranged, and teachers rated these experiences, as well as the field trips, as "very useful" to students.

Summary

Oakland Technical High School implemented an Academy that followed the Peninsula Academies model in nearly all respects. The Health Academy presented a cohesive academic and technical program that provided individual attention and motivation for its students. The principal deficiencies were:

- Not having a health laboratory "dedicated" to the Academy (The remodeling of the special Academy classroom was to be completed before the start of the 1986-87 school year.)
- A shortage of time for teacher inservice training and planning.

While there are differences between the program and comparison group students, particularly on ethnicity and pre-program grades, the statistically and educationally significant gains by the Academy group on attendance, credits, and grades suggest that the Health Academy is having a real and substantial effect on these outcomes. In the attitudinal area there were apparent declines in career planning, but the other ratings of the various aspects of the program by the students, staff, and private sector officials were generally favorable.

## FOOTHILL COMPUTER ACADEMY, OAK RIDGE HIGH SCHOOL
## (El Dorado Union High School District, Diamond Springs)

### Description and Implementation

The Foothill Computer Academy (FCA) is located at Oak Ridge High School, a comprehensive school with approximately 900 students. The school serves a predominantly non-minority population of students in a suburban area east of Sacramento.

Twenty-four students were selected for the program and entered the FCA as tenth graders in September 1985. Thirty-three students were identified as a comparison group.

The FCA operated with a part-time director (a teacher at another district high school) and one full-time teacher who taught all the Academy classes--English, mathematics, computer operations, and a remedial tutorial. The Academy schedule required students to have an extra class period every morning before the regular first period hour. The students spent four periods per day (for an average of 3.5 class periods per semester) with the Academy teacher in one classroom. There was no separate classroom for the computer laboratory. Class size (24 students) was about average for the high school.

Private sector support came primarily from Blue Shield of Placerville, whose employees served as mentors, curriculum advisors, and field trip hosts. The FCA is working to develop commitments from Intel, PG&E, and several small businesses in the Diamond Springs area.

### Program Impact

Comparability of Academy and comparison students. The Academy group was 35% female and the comparison group 36% female. All students in both groups were white. Data on attendance, credits, and grades of the comparison group for the 1984-85 school year were not reported. The comparison students were selected from among the approximately 60 students originally identified by the district as eligible for the Academy on the basis of standardized achievement

test scores, absence and tardy rates, grades, and disciplinary referrals. However, about half of the comparison students were students who were not selected for the Academy either because they did not follow through on the application process or because they were deemed unsuitable. Therefore, the comparison group must be considered a somewhat biased one.

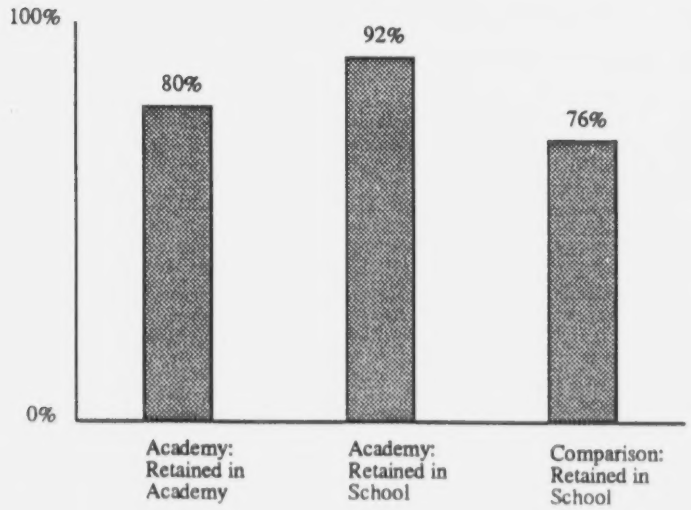
The following table shows the performance of the Foothill Academy students during the 1984-85 school year, before the FCA began.

Attendance, Credits, and GPA, 1984-85 School Year
(N=33)

| % Days Attended | Number of Credits Earned | GPA |
|---|---|---|
| 92.56% | 49.20 | 1.96 |

Enrollment and retention. The following figure shows the percent of students retained in the Academy program, retained in school (including those who dropped out of the Academy but remained in school), and the percent of comparison students retained in school.

Retention Rates, 1985-86 School Year
Academy and Comparison Students



Attendance. The attendance rates for Academy students are compared to the students' own attendance in ninth grade (1984-85) and to the attendance of the comparison students this school year (1985-86).

Attendance
(Percent Days Attended)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 91.97% | 95.62% | 93.54% | 94.40% | + 2.43* |
| N | (20) | (24) | (22) | (22) | |
| Comparison | -- | 88.60% | 92.84% | 90.58% | -- |
| N | | (24) | (23) | (23) | |
| Difference | -- | + 7.02 | + .70 | + 3.82 | -- |

Credits. Here again, comparisons are made between the credits earned by the Academy students last year and this, and by the Academy and comparison students this year. The typical student at Oak Ridge High must earn 50 to 60 credits per year to graduate in four years.

Credits
(Average Number of Credits)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 50.28 | 30.40 | 31.00 | 61.73 | + 11.45* |
| N | (18) | (24) | (20) | (20) | |
| Comparison | -- | 24.02 | 25.91 | 50.25 | -- |
| N | | (24) | (22) | (22) | |
| Difference | -- | + 7.02 | + .70 | + 3.82 | -- |

Grades. The grades of Academy students last year and this are compared, as well as those of the Academy and comparison students this year.

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* Significant at the .01 level.

Grades
(Average GPA)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 1.94 | 2.19 | 2.38 | 2.33 | + .39* |
| N | (18) | (24) | (20) | (20) | |
| Comparison | -- | 1.91 | 1.95 | 1.95 | -- |
| N | | (24) | (22) | (22) | |
| Difference | -- | + .28 | + .43 | + .38 | -- |

Responses to Student Questionnaire

A comparison of student responses to the incoming and year-end questionnaires provides an indication of the influence of the Academy on career planning, attitudes toward school, and self-esteem. Unfortunately, due to a clerical error, half of the post-program questionnaire was not administered, so that pre-post comparisons are not possible for several indicators. However, in this section are reported the student reactions to several aspects of the program, along with their overall rating of the Academy.

Career planning. Two questionnaire items were available to measure the students' progress in career planning.

- Have a definite plan for what to do the first two years after high school graduation: pretest, 30%; posttest, 43%.
- Have a long-term career goal: pretest, 60%; posttest, 64%.

Attitude toward school. FCA students did not complete the questionnaire item tapping attitude toward school. However, the school administrators who completed a year-end evaluation estimated that 90% of the Academy students showed increased interest in school and learning this school year; 1% showed decreased interest; and the remainder showed no change.

* Significant at the .01 level.

Attitude toward self. FCA students did not complete the questionnaire items tapping self-esteem. The school administrators estimated that virtually all (99%) of the Academy students demonstrated improved self-concept this year. One commented that there were fewer discipline and attendance problems among these students than expected.

Student rating of the Academy program. On the year-end questionnaire, students rated the quality of their contacts with the private sector, and also rated the overall program, commenting on their likes and dislikes.

- Contacts with private sector. The students reported they had an average of 8 to 9 guest speakers from industry during the school year. Ninety-three percent of the students had mentors during the spring semester. They rated these contacts with the private sector as follows:

| | Very Helpful | Somewhat Helpful | OK | Not Very Helpful | A Waste of Time |
|---|---|---|---|---|---|
| Guest speakers | 21% | 36% | 29% | -- | 14% |
| Mentor program | 8% | 23% | 38% | 23% | 8% |

- Overall rating of the program. Students rated how well they liked the Academy compared to the regular school program. On a scale of 1 to 5, where 1 = Much Better and 5 = Much Worse, they gave an average rating of 2.0. The ratings were distributed as follows:

| (1) Much Better | (2) Slightly Better | (3) Same | (4) Slightly Worse | (5) Much Worse |
|---|---|---|---|---|
| 36% | 36% | 21% | 7% | -- |

Among the problems mentioned by students at the end of the year were: being treated as "different" by others at the school; and adjusting to the special Academy schedule--early morning period, tutorial period, and having the same teacher for several classes. They reported that their most positive experiences in the FCA were: getting better grades (29%); making a class trip to the Ashland Shakespeare Festival (29%); and the pleasant atmosphere in the Academy (14%). Although on the pre-questionnaire, 38% said they expected their favorite part of the program to be working with computers, no one mentioned this on the year-end questionnaire.

## Responses to School Personnel Questionnaire

The school principal and assistant principal completed the year-end questionnaire, commenting on various aspects of the program's implementation. They rated the equipment and facilities as "good." The suggestion was made that the computers be placed in a separate computer laboratory and that a separate group study area be designated outside the Academy classroom. The curriculum, materials, counseling, and overall planning and management of the program were approved by these two respondents. They noted that other teachers, counselors, and administrators at the school were "somewhat" supportive of the program.

According to the two administrators, the main weaknesses of the Academy were:

- The program was too demanding to be managed by just one teacher;
- Parent involvement was not systematically organized.

They nevertheless noted that the FCA teacher was effective and the program seemed to work for "at-risk" students.

On a scale where 1 = Very Weak and 7 = Very Strong, the staff rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 6.5 |
| Implementation at FCA: | 6.5 |

## Parent Participation and Reactions

According to the school administrators, the Academy students' parents were supportive of the program, although no regular parent meetings were held.

The parents of four students completed an evaluation form at the end of the school year. Three of the four rated the program as "excellent" and the other as "good." All said their children had become more interested in school since joining the program. However, two parents said their children had not

made progress in career planning, while the others said they were not sure about this.

The parents noted they had been kept "very well" informed about their children's performance and "very" to "moderately well" informed about the Academy's special activities. They noted that the weakest aspects of the Academy were:

- Inadequacies in the mentor program: more clarification needed on the role of the mentors; more activities with mentors are needed
- Insufficient information for parents: need regular parent meetings, weekly progress reports from non-Academy as well as Academy teachers, and more information on curriculum objectives.

They found the strongest aspects of the program to be the commitment of the teacher and the individual consideration given to students. They expected their children to benefit from the program by demonstrating increased self-discipline, better self-image, more enthusiasm for education, and better school performance.

Responses to Private Sector Questionnaire

Eight employees of the FCA's primary private sector supporter (Blue Shield) responded to the evaluation questionnaire. Seven of them had served as mentors. Their responses are summarized here

- Ratings of field trips and guest speaker program. 33% rated the field trips and guest speakers as "highly useful" and 66% as "somewhat useful."
- Ratings of mentor program. 63% rated the mentor program as "highly useful" and 37% rated it "somewhat useful." Ratings of the management of the mentor program ranged from "excellent" (25%) to "poor" (12%). It was noted that mentors need more guidance and communication from the program administrators. Expectations should be clarified and more structured activities organized.
- Ratings of curriculum. 75% responded that the curriculum, if implemented as designed, would provide students with the skills needed by local business.

- Attitudes. 63% said their attitudes toward the public schools had improved through their involvement with the Academy program. They were pleased that the schools showed an interest in teaching about the business world.

The private sector respondents named the following program strengths:

- Close teacher-student relationships;
- Motivation for students to stay in school and prepare for jobs.

Summary

The selection procedures for the comparison group (e.g., unsuitability for the Academy group), and the absence of pre-program attendance, credits, and GPA data on this group, make it difficult to draw clear conclusions about program effects.

Nevertheless, statistically and educationally significant pre-post gains by the Academy group on the key outcome measures of attendance, credits earned, and GPA suggest that the FCA is having important effects on its students. These preliminary indications need to be confirmed in the future with fuller data.

Career planning was not substantially improved as a result of the Academy experience, and the ratings of the program by students, staff, and private sector representatives were generally fair to good.

Specific shortcomings identified were:

- Only one company from the private sector was actively involved.
- Parental involvement was unstructured.

## RIO CAZADERO ACADEMY, RIO CAZADERO HIGH SCHOOL
## (Elk Grove Unified School District, Sacramento)

The Rio Cazadero Academy (RCA) is located at one of the Elk Grove School District's four "alternative" high schools, each of which has an enrollment of fewer than 250 students in grades 10 through 12. The emphasis at the high school is on vocational and technical training, and the Rio Cazadero Academy itself focuses on computer-related careers. The high school is located in a suburban area on the southern edge of Sacramento and serves a predominantly white population of students.

Forty-three students were selected for the Academy, all from ninth graders at Elk Grove High School, a four-year comprehensive school. A comparison group of equal size was identified at Elk Grove High School.

The primary RCA instructional staff consisted of five teachers, one of whom also served as program coordinator or director. The Academy offered instruction in English, science, history, mathematics (on individual contract), and computers. The students took an average of 4.7 Academy classes each semester. The technical curriculum was in the developmental stage; the RCA expects to expand in years two and three to include electronics as applicable to computer repair. For the most part this year, the Academy's academic and technical curricula were not highly integrated.

Business involvement was actively pursued, largely by the school's principal, who took a strong interest in the Academy. Some of the companies involved included PG&E, GTE, Citizen's Utility, New England Mutual Life, German Engineering, Valley High Video, and Johnson's Bookkeeping Company. The involvement of the private sector focused on program planning, rather than on working with the students themselves.

### Program Impact

Comparability of Academy and comparison students. Both the Academy group and the comparison group were 46% female. The ethnic compositions of the two groups were:

| Ethnicity | Academy | Comparison |
|---|---|---|
| White | 74% | 77% |
| Hispanic | 12% | 14% |
| Black | 9% | 9% |
| Asian | 5% | -- |

The comparison group was selected from a pool of students who met the Academy eligibility criteria but who were not involved in the Academy application process.

The following table shows the performance of the future Academy and comparison group students during the 1984-85 school year, before the RCA program began.

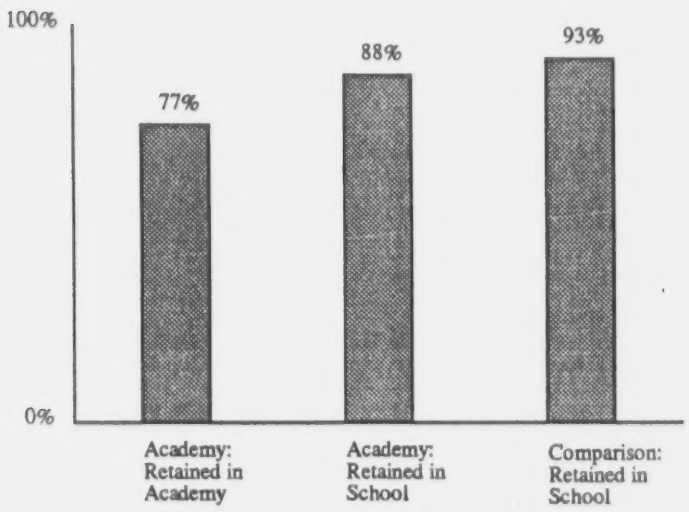
Attendance, Credits, and GPA, 1984-85 School Year
Academy and Comparison Students

| Group/N | % Days Attended | No. Credits Earned | GPA |
|---|---|---|---|
| Academy | 76.53% | 32.08 | 1.09 |
| N | (38) | (42) | (42) |
| Comparison | 89.70% | 40.44 | 1.41 |
| N | (43) | (43) | (43) |
| Difference | - 13.17 | - 8.36 | - .32 |

The performance of the comparison group students in ninth grade was significantly better than that of the future Academy students on all three indicators ($p < .01$ for attendance and credits and $p < .05$ for GPA). Thus, while the comparison group was selected in an unbiased manner, the school performance of the Academy group was notably poorer prior to their entering the program.

Enrollment and retention. The following graph shows the percent of students retained in the Academy program, retained in school (including those who dropped out of the Academy but remained in school), and the percent of comparison students retained in school.

Retention Rates, 1985-86 School Year
Academy and Comparison Students




Attendance. The attendance rates for Academy students are compared to the students' own attendance in ninth grade (1984-85) and to the attendance of the comparison students this school year (1985-86).

Attendance
(Percent Days Attended)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Gain |
|---|---|---|---|---|---|
| Academy | 78.30% | 94.46% | 92.53% | 93.49% | + 15.19 |
| N | (33) | (35) | (40) | (35) | |
| Comparison | 89.70% | 84.49% | 87.39% | 86.59% | - 3.11 |
| N | (43) | (43) | (40) | (40) | |
| Difference | - 11.40 | + 9.97 | + 8.14 | + 6.90 | + 18.30* |

Credits. Here again, comparisons are made between the credits earned by the Academy students last year and this, and by the Academy and comparison students this year. A student at Rio Cazadero High School is expected to complete 60 units per year to stay on track for graduation in four years.

* Significant at the .01 level.

Credits
(Average Number of Credits)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 30.54 | 32.90 | 32.20 | 65.38 | + 34.84 |
| N | (37) | (38) | (40) | (37) | |
| Comparison | 40.44 | 22.14 | 20.46 | 43.60 | + 3.16 |
| N | (43) | (43) | (40) | (40) | |
| Difference | - 9.90 | + 10.76 | + 11.74 | + 21.78 | + 31.68* |

Grades. The grades of Academy students from last year and this are compared, as well as those of the Academy and comparison students this year.

Grades
(Average GPA)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 1.05 | 2.83 | 2.92 | 2.88 | + 1.83 |
| N | (37) | (38) | (40) | (37) | |
| Comparison | 1.41 | 1.59 | 1.31 | 1.49 | + .08 |
| N | (43) | (43) | (40) | (40) | |
| Difference | - .36 | + 1.24 | + 1.61 | + 1.39 | + 1.75* |

## Responses to Student Questionnaire

A comparison of student responses to the incoming and year-end student questionnaires provides an indication of the influence of the Academy on career planning, attitudes toward school, and self-esteem. These responses are reported in this section, along with the students' ratings of some of the Academy's specific components and of the overall program.

* Significant at the .01 level.

Career planning. Four questionnaire items measured the students progress in career planning. A summary of responses follows.

- Have a definite plan for what to do the first two years after high school graduation: pretest, 20%; posttest, 30%.
- Have a long-term career goal: pretest, 49%; posttest, 40%.
- Agree that it is important to gain job skills while in high school: pretest, 84%; posttest, 97%.
- Agree that becoming a success is not mainly a matter of luck, but is dependent on hard work: pretest, 81%; posttest, 74%.

Attitudes toward school. Incoming Academy students rated how well they had liked school the previous year, and then at the end of this school year, they rated how well they liked their year in the Academy.

- Found school "usually" or "very" interesting/liked school "quite a bit" or "very much": pretest, 13%; posttest, 60%.
- The school personnel involved in the RCA estimated that 94% of the students showed increased interest in school and learning this year, 1% showed decreased interest, and 5% showed no change in attitude toward school.

Attitudes toward self. At the end of the school year, the students were asked to estimate the change in their attitudes toward themselves, taking into consideration confidence about school, their academic abilities, and about their ability to make friends.

- 87% of the students said they felt "much better" or "a little better" about themselves and 13% said there was no difference in the way they felt about themselves after a year in the Academy.
- Agree that they would like to be someone different from themselves: pretest, 29%; posttest, 21%
- The school personnel estimated that 92% of the Academy students had increased their self-confidence and esteem, 1% had decreased, and the rest had shown no change.

Student ratings of the Academy program. On the year-end questionnaire, students rated their contacts with the private sector, the Academy's equipment

and instructional materials, extra help received with schoolwork, and the overall program.

- Contacts with private sector. The students reported an average of 3 to 4 guest speakers and 1 or 2 field trips during this school year They rated these experiences as follows:

| | Very Helpful | Somewhat Helpful | OK | Not Very Helpful | A Waste of Time |
|---|---|---|---|---|---|
| Guest speakers | 25% | 39% | 25% | -- | 11% |
| Field trips | 30% | 17% | 43% | 9% | -- |

- Equipment and materials. Students rated the quality of the computer equipment and of the books, software, films, and other instructional materials in their academic and technical classrooms. Responses were as follows:

| | Excellent | Good | Average | Poor | Terrible |
|---|---|---|---|---|---|
| Equipment | 7% | 70% | 23% | -- | -- |
| Materials | 17% | 47% | 37% | -- | -- |

- Extra help. An Academy should be structured to provide for special individualized assistance for students with academic problems.

  - At the end of the school year, 64% of the RCA students reported that they "always" or "usually" received the extra help they needed, 17% said "sometimes," and 20% said they "occasionally" received this help.

  - The students reported that the most frequent sources of extra help were: the teacher of the class where the problem arose (83%), another student (33%), parents (27%), and another Academy teacher (23%).

- Overall rating of program. At the end of the school year, students rated how well they liked the Academy compared to the regular school program. On a scale of 1 to 5, where 1 = Much Better and 5 = Much Worse, they gave an average rating of 1.33. The ratings were distributed as follows:

| (1) Much Better | (2) Slightly Better | (3) Same | (4) Slightly Worse | (5) Much Worse |
|---|---|---|---|---|
| 77% | 17% | 3% | 3% | -- |

The problems most commonly mentioned by the students on the end-of-the-year questionnaire related to the Academy schedule--having the same schedule for the full school year. A variety of positive experiences were mentioned, including having better grades and attendance (34%), working with the computers (28%), having helpful teachers (19%), and generally learning more (16%).

Responses to School Personnel Questionnaire

Six educators at Rio Cazadero High School completed the end-of-year questionnaire: four teachers (including the Academy director), the school work experience counselor, and the principal. They commented on the program and rated various aspects of its implementation.

The computer equipment was rated as "good," but a need for a more varied assortment of computers was expressed. Facilities and instructional materials were rated as a little better than the average for the school. The respondents noted that on the whole the curriculum was "good," but that more work was needed to integrate the academic and technical content, incorporate input from the private sector, and clarify the curriculum goals. They noted that individualized instruction and special help were made available to students, and that the counseling component had been "good."

Regarding the private sector involvement, the staff commented that this had been only "somewhat" useful and that this aspect of the Academy model had not been fully implemented.

Respondents noted that the other, non-Academy teachers, counselors, and school administrators were generally supportive of the RCA, although there had been some division of opinion about the Academy among non-program teachers. Dissatisfaction was registered regarding the criteria and procedures both for selecting Academy students and for dropping unresponsive students from the program.

According to these six respondents, the main weaknesses of the RCA this year were:

- Lack of clearly stated goals and policies for students and parents;
- A cumbersome selection process that resulted in too many unsuitable students;
- Isolation of students from the rest of the school program.

Despite these criticisms, the school personnel found that the Academy teachers and students worked well together toward a common goal, which made the students feel special and brought about improvements in their academic and technical skills.

On a scale where 1 = Very Weak and 7 = Very Strong, the staff rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 6.75 |
| Implementation at RCA: | 4.17 |

Parent Participation and Reaction

According to the school personnel, the majority of the Academy students' parents were "very supportive and interested" in the program. Parents of 32 students completed the year-end evaluation form. Some of their responses are summarized here:

- 59% rated the overall quality of the program as "excellent," and 38% as "good."
- 78% noted that their children had become "much more interested in school" this year and the remaining 22% "a little more interested." Several parents commented on this:

  "Last year my son didn't go to school; this year he hates to miss a day."

  "Attitude and attendance improved tremendously."

  "100% turnaround in attitude."

- 91% said the Academy staff kept them "very well" or "moderately well" informed about their child's progress, and 9% said they were informed "poorly" or "not at all."

- 88% said they were kept "very well" or "moderately well" informed about the Academy's special activities, and 12% said "poorly" or "not at all."

According to these parents, the weakest aspects of the program were that it was not sufficiently difficult or demanding (12.5%) and that bus transportation to the school was unsatisfactory (12.5%).

They said that the best features of the program were: good teachers, who cared about students and motivated them (32%); individual attention (22%); and the program related to real life and taught useful computer skills (22%).

Responses to Private Sector Questionnaire

Three employees, representing three different sponsoring companies, completed the evaluation questionnaire. They had served as council members, classroom speakers, and program consultants. A summary of their responses follows:

- Ratings of field trips and guest speaker program. Two of the three respondents rated the speaker program as "highly useful," but none of the three felt well enough informed to comment on the usefulness of the field trips.

- Curriculum. Two of the three respondents noted that the curriculum would help students acquire skills needed for employment, and one was not familiar with the curriculum.

- Attitudes. The three respondents said their attitudes to the schools had improved this year and that the site council meetings had been very informative.

These three individuals said that the strengths of the RCA were its solid leadership and staff, committed to giving young people direction and hope. They commented that the Academy has a need for improved public relations and for more "time, space, and money."

On a scale where 1 = Very Weak and 7 = Very Strong, the private sector rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 6.75 |
| Implementation at RCA: | 3.88 |

Summary

The Rio Cazadero Academy closely followed the Academy program model in nearly all respects. Its main weaknesses were:

- Lack of integration between the technical and academic curricula;
- Lack of clearly and fully stated goals and policies;
- Low level of private sector presence in the students' lives--e.g., few speakers or field trips.

Despite these areas where work is needed, and despite the teachers' own self-critical evaluation, the RCA made a dramatic difference in the achievement and attitudes of its students. On every indicator except retention, which was high for both groups, the students showed highly significant growth over last year and dramatically better performance than the comparison group this year. Remarkably large gains were registered on grades, credits, and attitudes toward school and self. The one attitude where the students showed little change was in career planning, a finding which ties in with the low level of interaction with the private sector supporters.

Both parents and students were enthusiastic about the Academy. The students' general excitement about the program was expressed by one girl who wrote on her questionnaire: "I found out that I have knowledge to succeed.... My attendance has improved tremendously, along with my outlook on school and life."

## JOHNSON CORPORATE ACADEMY, HIRAM JOHNSON HIGH SCHOOL
## (Sacramento City Unified School District, Sacramento)

### Description and Implementation

The Johnson Corporate Academy (JCA) is located at a large, urban high school with about 3000 students of diverse ethnic backgrounds, including Black, Hispanic, and Asian, as well as White. Their socioeconomic backgrounds are also varied.

Sixty-nine students were enrolled in the Academy at the beginning of the 1985-86 school year, and a comparison group was identified, comprising the 118 students who expressed interest in the Academy but did not follow through on their applications. Both ninth and tenth graders were accepted into the Academy--14 ninth and 55 tenth graders. The comparison group had 79 ninth and 39 tenth graders.

The focus of the Johnson Corporate Academy is on business applications of the computer. There were four full-time Academy teachers, providing classes in English, mathematics, social science, and computer technology; students took an average of four Academy classes each semester. Each teacher taught four periods and had an extra preparation period for planning and coordination. Class size was smaller than average for the school.

Business involvement in the JCA was initiated through the Sacramento Chamber of Commerce and included support from PG&E, Bank of America, IBM, the Sacramento Municipal Utility District, McClellan Air Force Base, and a Sacramento Bankers Association.

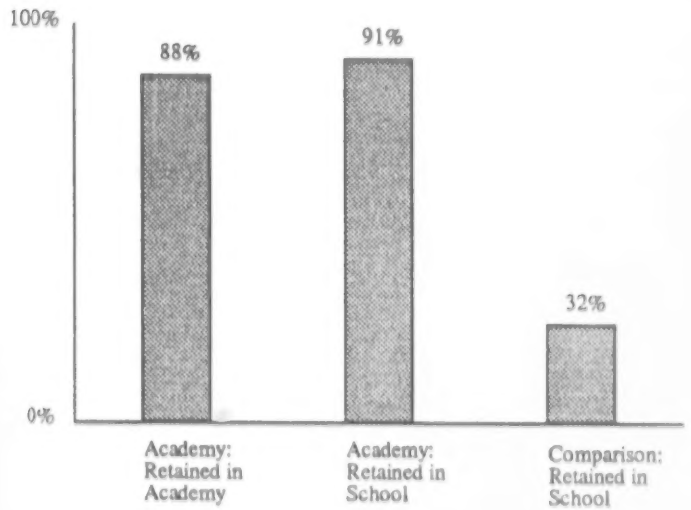
### Program Impact

Comparability of Academy and comparison students. The Academy group was 48% female, and their ethnic composition was 32% White, 19% Hispanic, 33% Black, and 16% Asian. The comparison group was 42% female; no information on their ethnicity was available. Due to the selection procedure in which the more motivated students were selected for the Academy, the comparison group

for the JCA may not be well-matched. Unfortunately, no data on attendance, credits, or grades were available for the comparison students for the 1984-85 (pre-Academy) school year. All the following comparisons of retention, attendance, credits, and grades should be cautiously interpreted.

Enrollment and retention. The following graph shows the percentage of students retained in the Academy, retained in school (including those who dropped out of the Academy but stayed in school), and the percent of comparison students retained in school.

Retention Rates, 1985-86 School Year
Academy and Comparison Students




Attendance. No attendance data for the pre-Academy school year were reported, so changes in attendance rates cannot be reported. Further, attendance rates for neither the Academy nor the comparison students were available for the 1985 fall semester. Therefore, the only comparison possible is between the Academy and comparison students' attendance for the spring 1986 semester:

Attendance
(Percent Periods Attended)

| Group/N | Spring 1986 Semester |
|---|---|
| Academy | 86.39% |
| N | (63) |
| Comparison | 74.38% |
| N | (38) |
| Difference | + 12.01 |

Credits. Comparisons are made here between the credits earned by the Academy students last year and this, and by the Academy and comparison students this year. The typical student at Hiram Johnson High School must earn 50 credits per year to stay on track for graduation.

Credits
(Average Number of Credits)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 53.03 | 28.82 | 26.35 | 55.85 | + 2.82* |
| N | (63) | (69) | (63) | (63) | |
| Comparison | -- | 11.76 | 19.47 | 39.07 | -- |
| N | | (74) | (37) | (37) | |
| Difference | -- | + 17.06 | + 6.88 | + 16.78 | -- |

Grades. Grades of the Academy students last year and this are compared, as well as those of the Academy and comparison groups this year.

* Significant at the .01 level.

Grades
(Average GPA)

| Group/N | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| Academy | 1.68 | 2.09 | 1.89 | 2.02 | + .34* |
| N | (63) | (69) | (63) | (63) | |
| Comparison | -- | 0.86 | 1.47 | 1.50 | -- |
| N | | (74) | (37) | (37) | |
| Difference | -- | + 1.23 | + .42 | + .52 | -- |

Responses to Student Questionnaire

A comparison of student responses to the incoming and year-end student questionnaires provides an indication of the influence of the Academy on career planning, attitudes toward school, and self-esteem. These responses are reported in this section, along with the students' ratings of some of the Academy's specific components and of the overall program.

Career planning. Four questionnaire items measured the students' progress in career planning. A summary of responses follows.

- Have a definite plan for what to do the first two years after high school graduation: pretest, 35%; posttest, 24%.
- Have a long-term career goal: pretest, 71%; posttest, 44%.
- Agree that it is important to gain job skills while in high school: pretest, 98%; posttest, 100%.
- Agree that becoming a success is not mainly a matter of luck, but is dependent upon hard work: pretest, 81%; posttest, 83%.

Attitudes toward school. Incoming Academy students rated how well they liked school the previous year, and then at the end of this school year, they rated how well they liked their year in the Academy.

- Found school "usually" or "very" interesting/liked school "quite a bit" or "very much": pretest, 25%; posttest, 62%.

* Significant at the .01 level.

- The teaching staff estimated that 75% of the students showed increased interest in school and learning this year, 6% showed decreased interest, and 19% showed no change in attitude.

Attitudes toward self. At the end of the school year, the students were asked to estimate the change in their attitudes toward themselves, taking into consideration their confidence in school and in making friends.

- 90% of the students said they felt "much better" or "a little better" about themselves; 2% said they felt "a little worse;" and 7% said there was no difference.
- Agree that they would like to be someone different from themselves: pretest, 34%; posttest, 27%.
- The teachers estimated that 66% of the students had increased their self-confidence and esteem, 5% had decreased, and the rest had shown no change.

Student ratings of the Academy program. On the year-end questionnaire, students rated their contacts with the private sector, the Academy's equipment and instructional materials, extra help received with schoolwork, and the overall program.

- Contacts with private sector. The students reported an average of 3 guest speakers this school year and 4 or 5 field trips to businesses in the Sacramento area. They rated these experiences as follows:

| | Very Helpful | Somewhat Helpful | OK | Not Very Helpful | A Waste of Time |
|---|---|---|---|---|---|
| Guest speakers | 24% | 48% | 26% | 2% | -- |
| Field trips | 36% | 40% | 21% | 2% | -- |

- Equipment and materials. Students rated the quality of the equipment in their computer laboratory classroom and of the books, kits, software, films, and other instructional materials in their academic and technical classes. Responses were as follows:

| | Excellent | Good | Average | Poor | Terrible |
|---|---|---|---|---|---|
| Equipment | 33% | 64% | 2% | -- | -- |
| Materials | 24% | 52% | 24% | -- | -- |

- Extra help. An Academy should be designed to provide for special individualized assistance with academic problems.

  - At the end of the school year, 61% of the students reported that they "always" or "usually" received the extra help they needed; 24% said "sometimes," and 15% said they "occasionally" received this help.

  - The students reported that the most frequent sources of extra help were: the teacher of the class where the problem arose (66%), another Academy teacher (46%), and parents (20%).

- Overall rating of program. At the end of the school year, students rated how well they liked the Academy compared to the regular school program. On a scale of 1 to 5, where 1 = Much Better and 5 = Much Worse, they gave an average rating of 1.33. The ratings were distributed as follows:

| (1) Much Better | (2) Slightly Better | (3) Same | (4) Slightly Worse | (5) Much Worse |
|---|---|---|---|---|
| 71% | 24% | 5% | -- | -- |

Although on the pretest about 25% of the students expected to experience problems in the Academy with "too much work" and too high expectations from the teachers regarding promptness, attendance, etc., by the time of the posttest, only 12% said they had actually experienced problems in these areas. The most frequently named problem at the end of the year was that the teachers were not strict enough with the non-serious students. What students reported liking best about the Academy were the field trips (21%), feeling positive about school and themselves (21%), learning about computers (14%), and the special attention and motivation they got from the teachers (14%).

Responses to the School Personnel Questionnaire

At the end of the school year, the four JCA teachers completed a questionnaire in which they commented on the program and rated various aspects of its implementation. Their responses are summarized here.

They rated the classroom facilities and instructional materials as "good" to "average," and the computer lab equipment as "excellent." They also rated the curriculum as "good" to excellent" and noted that many units in the academic classes were interrelated with those in the technical class. The teachers commented, however, that they needed more work on the curriculum with consultation from the private sector.

These respondents rated the school administrators as "very supportive" of the JCA, and other teachers in the school as "somewhat supportive." They felt that the regular school counselors were "slightly" supportive, at best. They also rated the career and school-related counseling received by the Academy students as "inadequate," as provided by school counselors, but "good" as provided informally by the Academy staff.

The orientation to the new program for the Academy teachers was rated as "good" although not all the teachers had participated. The four teachers agreed that the JCA's criteria and procedures for selecting students and for dropping unresponsive students were satisfactory.

The teachers rated the cooperation from the private sector as "somewhat" to "very effective," and they agreed that the field trips and guest speakers had been "highly useful."

According to the teachers, the biggest problem facing the JCA was the possibility that the district might not continue to afford the program's smaller class sizes and extra planning/preparation period for teachers. But these very factors--small classes and more preparation time, which led to increased, high-quality interactions between teachers and students--were named by the teachers as the program's strongest components.

On a scale where 1 = Very Weak and 7 = Very Strong, the teachers rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 6.75 |
| Implementation at JCA: | 5.75 |

## Parent Participation and Reaction

According to the four JCA teachers, the parents of Academy students were very supportive and interested in the program.

Five parents completed a year-end evaluation for the program. They rated the overall quality of the Academy as "good" to "excellent," and all noted that their children had become more interested in school and learning since joining the program. Four out of the five also said their child was making good progress in planning for the future.

Although three out of the five parents said they had been kept very well informed about Academy activities and their child's progress, the other two parents felt that communications between school and home needed improvement, specifically notification about attendance and information on how parents could be helpful to the JCA. This was the only program weakness noted by the responding parents. The aspect of the JCA that these parents most appreciated was the close monitoring of the students' progress, including weekly progress reports. They also liked the small class size, close supervision, hands-on experience, and field trips afforded to Academy students, all of which contributed to building in the students a sense of responsibility.

## Responses to Private Sector Questionnaire

No questionnaires were completed by the private sector supporters of this Academy.

## Summary

The Johnson Corporate Academy closely followed the Peninsula Academies model, offering four Academy periods, small classes, an interrelated technical and academic curriculum, and an extra preparation period for teachers. Its shortcomings were primarily in the area of private sector involvement. More input on curriculum and a more active program of guest speakers would strengthen the program. In addition, the JCA needs to develop support among the school counseling staff.

The most dramatic data came from the high retention rate for the program students, compared with the comparison group. Attendance also was substantially higher for the program group during the spring semester. Unfortunately the questions regarding the comparability of the two groups and the absence of pre-program comparison group data make it impossible to draw firm conclusions. No significant change occurred on credits earned. The GPA of the Academy group did improve appreciably, but again, lack of dependable comparison group data makes this change ambiguous.

On attitudinal measures, program students demonstrated no gains in career planning. They did improve in attitude toward school and in self-esteem. And 95% of the Academy students said they liked the JCA better than the regular school program. The majority said they usually received extra help from the Academy teachers, and they were enthusiastic about the special attention and activities offered by the JCA.

## EAST SIDE ELECTRONICS ACADEMIES, SILVER CREEK HIGH SCHOOL
## (East Side Union High School District, San Jose)

### Description and Implementation

The Academy at Silver Creek High School is one of two operated by the East Side District, which is located on the edge of the city of San Jose. Silver Creek draws most of its students from a lower-middle income community and has an enrollment of 2300 students, of whom approximately 40% are Hispanic, 30% White, 20% Black, and 10% Asian or Pacific Islander.

The East Side Electronics Academies (ESEA) program is the largest of the Academy replications and the only one to start with ninth instead of tenth graders (a four-year program is planned). At Silver Creek, 102 students enrolled in the Academy in September 1985. Because of the large size of this class, no new students will enter the Academy until the 1987-88 school year. No comparison group was identified, because nearly all eligible students at Silver Creek were enrolled in the ESEA, and those that were not were served by another special program (Project Esteem).

The ESEA's goal is to prepare students for entry-level careers in electronics technology, assembly, and other areas of electronics and computer manufacture. The program was centrally coordinated at the district level, where the ESEA director and industry liaison coordinator were located. At Silver Creek, there were four full-time Academy teachers, each of whom taught four classes and had two preparation periods. One of the teachers also acted as the Academy department chairperson. All the students took Academy mathematics, science, English, and electronics each semester, plus their regular program courses. The ESEA classrooms at Silver Creek were not adjacent to one another, but there was a small office dedicated to the program.

The ESEA had numerous sponsoring companies, the most active of which were IBM, Hewlett-Packard, Versatec, Measurex, Altos Computer Systems, Activision, and Advanced Micro Devices. A cooperative business-school operating committee met monthly, and a curriculum advisory group worked with the teachers. The

sponsoring industries donated furniture and electronics equipment, but their major contribution was employee time--hosting field trips, serving as classroom speakers, and working on committees.

Program Impact

Student profile. Thirty-six percent of the entering class was female. the ethnic composition of the group was:

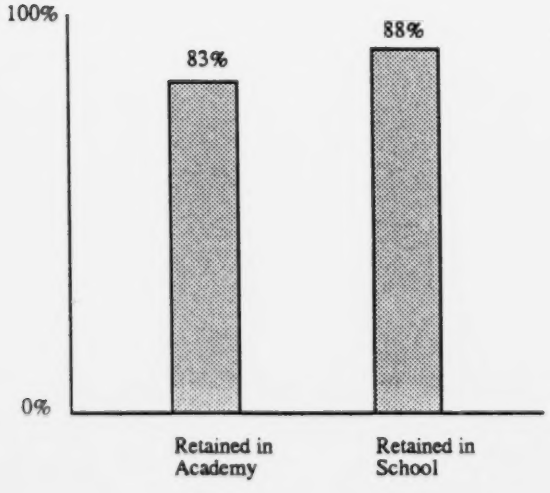
| Ethnicity | Percent |
|---|---|
| White | 28% |
| Hispanic | 45% |
| Black | 24% |
| Asian | 2% |
| Other Minority | 2% |

The following table shows the performance of the future Academy students during the 1984-85 school year, when they were in eighth grade.

Credits and GPA, 1984-85 School Year
(N=87)

| Numer of Credits Earned | GPA |
|---|---|
| 55.17 | 2.0 |

Retention Rates, 1985-86 School Year
Academy Students



Enrollment and retention. The following graph shows the percent of students retained in the Academy program and the percent who were retained in school, including those who dropped out of the program during the year.

Attendance. Attendance data on the Academy students for the 1984-85 school year were not reported because it was not possible to collect comparable data from the ten junior high schools, located in three different school districts, from which the Academy students came. Therefore (and in the absence of a comparison group), there is no standard by which to gauge whether or not the ESEA made an impact on student attendance. The attendance rates for the 1985-86 school year were as follows:

Attendance
(Percent Days Attended)
(N=87)

| Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year |
|---|---|---|
| 93.80% | 91.06% | 92.45% |

While attendance averaged over 92% for the school year, there was a statistically significant drop in the daily rate between the fall and spring semesters ($p < .01$).

Credits. Comparisons are made between the credits earned by the Academy students last year and this, and between credits earned during fall and spring semesters this year. It should be kept in mind that the comparison between achievement in junior high and senior high school may not be a valid one and may tend to undervalue high school achievement.

Credits
(Average Number of Credits)

| | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| | 55.49 | 22.95 | 20.57 | 44.41 | - 11.08 |
| N | (82) | (87) | (87) | (82) | |

Comparing the same students last year and this and both semesters, we find a large drop in the number of credits earned (significant at $p < .01$). The average student at Silver Creek High School must earn approximately 50 credits per school year to stay on track for graduation, and the Academy students fell short of this goal.

Grades. Again, comparisons are made between the grades of the Academy students last year and this, and between their grades in the fall and spring semesters of this school year.

Grades
(Average GPA)

| | 1984-85 School Year | Fall 1985 Semester | Spring 1986 Semester | 1985-86 School Year | School Year Change |
|---|---|---|---|---|---|
| | 1.99 | 1.74 | 1.45 | 1.65 | - .34 |
| N | (81) | (86) | (86) | (81) | |

The group as a whole earned significantly lower GPAs this year than last, and their grades also dropped between the fall and spring semesters ($p < .01$). Academy standards in junior and senior high schools may not be comparable.

## Responses to Student Questionnaire

A comparison of student responses to the incoming and year-end student questionnaires provides an indication of the influence of the Academy on career planning, attitudes toward school, and self-esteem. These responses are reported in this section, along with the students' ratings of some of the Academy's specific components and of the overall program.

Career planning. Four questionnaire items measured the students' progress in making career plans. A summary of responses follows:

- Have a definite plan for what to do the first two years after high school graduation: pretest, 24%; posttest, 33%.
- Have a long-term career goal: pretest, 48%; posttest, 55%.

- Agree that it is important to gain job skills while in high school: pretest, 94%; posttest, 96%.

- Agree that becoming a success is not mainly a matter of luck, but is dependent on hard work: pretest, 68%; posttest, 71%.

Attitudes toward school. Incoming Academy students rated how well they had liked school the previous year, and then at the end of this school year, they rated how well they liked their year in the Academy.

- Found school "usually" or "very" interesting/liked school "quite a bit" or "very much": pretest, 26%; posttest, 48%.

- The teaching staff estimated that about 37% of the students increased their interest in school and learning this year, 23% had decreased interest, and 33% showed no change.

Attitudes toward self. At the end of the school year, the students were asked to estimate the change in their attitudes toward themselves, taking into consideration confidence about their abilities in school and in making friends.

- 78% of the students said they felt "much better" or "a little better" about themselves; 19% said there was no difference; and 3% said they felt "a little worse" about themselves after a year in the Academy program.

- Agree that they would like to be someone different from themselves: pretest, 37%; posttest, 27%.

- The teaching staff estimated that 68% of the students had increased their self-confidence and esteem, and the remaining 32% had shown no change.

Student ratings of the Academy program. On the year-end questionnaire, students rated their contacts with the private sector, the Academy's equipment and instructional materials, extra help received with schoolwork, and the overall program.

- Contacts with private sector. The students reported an average of 10 guest speakers this school year and 6 field trips to local companies. They rated these experiences as follows:

| | Very Helpful | Somewhat Helpful | OK | Not Very Helpful | A Waste of Time |
|---|---|---|---|---|---|
| Guest speakers | 40% | 39% | 21% | -- | -- |
| Field trips | 45% | 30% | 23% | 2% | -- |

- Equipment and materials. Students rated the quality of the equipment in their electronics laboratory classroom and of the books, kits, films, and other instructional materials in their academic and technical classrooms. Responses were as follows:

| | Excellent | Good | Average | Poor | Terrible |
|---|---|---|---|---|---|
| Equipment | 21% | 62% | 16% | 1% | -- |
| Materials | 18% | 54% | 24% | 4% | -- |

- Extra help. An Academy should be designed to provide for special individualized assistance with academic problems.

  At the end of the school year, 46% of the students reported that they "always" or "usually" received the extra help they needed; 35% said "sometimes," and 20% said they "occasionally" or "never" received this help.

  The students reported that their most frequent sources of extra help were: the teacher of the class where the problem arose (75%), parents (39%), another Academy teacher (22%).

- Overall rating of program. At the end of the school year, students rated how well they liked the Academy compared to the regular school program. On a scale of 1 to 5, where 1 = Much Better and 5 = Much Worse, they gave an average rating of 1.55. The ratings were distributed as follows:

| (1) Much Better | (2) Slightly Better | (3) Same | (4) Slightly Worse | (5) Much Worse |
|---|---|---|---|---|
| 64% | 23% | 9% | -- | 3% |

The majority of students reported having no problems with the Academy program this year. However, 13% mentioned having problems in their academic classes, and another 7% had difficulties with electronics. Among the "most positive experiences" mentioned by the students were: going on field trips (25%); having helpful teachers (11%); the friendly, congenial atmosphere (11%); and generally learning more (8%).

Responses to School Personnel Questionnaire

At the end of the school year, the four Academy teachers completed a questionnaire in which they commented on the program and rated various aspects of its implementation. Their responses are summarized here.

They rated the equipment, books, and instructional materials as "good." The technical curriculum was rated as "good" to "excellent," and academic curriculum as "good" to "average." The teachers all noted that few academic and technical units of instruction were interrelated and that curriculum development work was needed.

The classroom facilities were rated as "poor" to "average." The main problems in this area were that the Academy classrooms were not in close proximity and that the Academy had to share classrooms with other teachers.

The teachers noted that the other teachers, counselors, and administrators at Silver Creek were generally supportive of the Academy program. They rated the overall program planning and management for the Academy as about "average," but commented that while the coordination of the program at the district level was good, the teachers at the Silver Creek site had poor teamwork skills. They noted that the one staff orientation meeting was held too late in the semester, and that although the teachers met frequently, they still had problems working as a unit.

Class size at the ESEA was generally about 26 students, compared to a school average of about 34 students. The teachers felt, however, that the Academy's efforts to provide extra instructional assistance to students were only "fair." All four teachers agreed that the students' need for individual tutoring had not been met satisfactorily. Tutoring sessions were held, but according to the teachers, the students who most needed the help did not ask for it. The Academy's counseling program was rated as "good."

The responding teachers criticized the ESEA's criteria and procedures for selecting students, noting that many were not interested in electronics. They mentioned the difficulty of recruiting appropriate students in a school that

was already served by another program (Esteem), which drew from the same population. According to the teachers, the result was an Academy student body that had lower academic skills than desirable. The teachers also noted that the Academy had developed no consistent policies for dropping students from the program.

The teachers responded very positively to the role of industry in the Academy. They agreed that the cooperation and interactions between private sector representatives and the school had been "very effective" and that the field trips, speakers, and the like had been "very useful." Two teachers noted that as a result of their involvement with the Academy, their attitudes toward the business community had improved. One noted that she was impressed with the way the "private sector strives for excellence."

According to the Academy teachers, the weakest aspects of the ESEA at Silver Creek were: lack of teamwork on the part of the teachers; lack of integration between the academic and technical curricula; poorly defined goals and discipline policies; and location of classrooms.

The program's greatest strengths were: administrative support for the program; the contacts and assistance from industry; and the caring attitudes of the teachers.

On a scale where 1 = Very Weak and 7 = Very Strong, the staff rated the Academy as follows:

| | |
|---|---|
| Academy concept: | 6.5 |
| Implementation at ESEA, Silver Creek: | 4.0 |

Parent Participation and Reaction

According to the Academy teaching staff questionnaire responses, the parents of Academy students were generally unsupportive and uninterested in the program. Many parents worked and had no time for the program or for monitoring the progress of their children's schoolwork.

The parents of 20 Academy students completed an evaluation form at the end of the school year. Twenty percent rated the program as "excellent," 55% as "good," 20% as "average," and 5% did not know. Sixty percent said they had noticed a change in their child's attitude toward school during this school year; of these, 85% said they were "much" or "a little more interested in school," and 15% said their children had become "much less" interested. Fifty-five percent of the parents said their child was making good progress in career planning, but 30% said this was not the case, and 15% were not sure.

The parents were generally satisfied with the information they received from the Academy: 85% said the staff kept them "very well" or "moderately well" informed about the Academy special activities, and 15% said they were kept "poorly" informed. Regarding communications from the Academy staff about their child's progress or performance in school, 75% said they were kept "very well" or "moderately well" informed and 20% "poorly" informed. (Five percent did not answer.)

The parents named as the weakest aspects of the program: communications with parents; lack of sufficient discipline in some of the classes; and the isolation of the Academy from others at the high school, including the students from other students, and Academy teachers from those in the regular program. What parents liked best about the ESEA were its career-oriented approach; the students' exposure to the work environment; and the small classes and helpful teachers, who built the students' confidence and improved their academic performance.

Responses to Private Sector Questionnaire

Thirteen private sector supporters completed year-end questionnaires on the ESEA. Their responses are summarized in the site report for the ESEA, Independence High School.

To summarize briefly, the private sector respondents said main weaknesses of the ESEA were that the program attempted to serve too many students, that more resources were needed, and more personal contacts were needed between industry employees and teachers. They also noted that strategies should be

developed to motivate students and to build esprit de corps among teachers and students.

They named as the program's strengths the dedicated staff at all levels, and the good working relationship with and strong support from industry.

On a scale where 1 = Very Weak and 7 = Very Strong, the private sector representatives rated the ESEA (at Independence as well as Silver Creek) as follows:

| | |
|---|---|
| Academy concept: | 5.8 |
| Implementation at ESEA: | 5.2 |

Summary

The ESEA followed the Academy model closely in terms of class schedule, teacher release time, and industry involvement. It differed sharply from the model in its large size and in serving ninth instead of tenth graders in the first year. The main deficiencies of the ESEA at Silver Creek included:

- Many students lacked interest in electronics;
- There was difficulty recruiting appropriate students in a school that was already served by a competing program (Esteem);
- There was a lack of unity, both physically (in terms of classroom location) and psychologically (in terms of teacher teamwork and student spirit);
- Programs of extra help for students with academic problems were ineffective;
- There was a low level of parental involvement.

The impact of the program on student performance was difficult to measure due to the lack of a comparison group and the fact that the pre-treatment data were from junior high school, a system whose standards of credits and grading may be different from those of the high school. The Academy students' attendance and level of school retention were good, as compared with other Academy replication sites (see Chapter II). During the year, however, attendance dropped. Both credits earned and GPA were down from the previous

year. Also, students did not earn the number of credits during the year needed to stay on track for graduation.

There did seem to be improvements in students' attitudes toward school and self. Students seemed to like the program. Private sector support was good, as was school administrative support. However, there is little evidence of positive program impact as yet. This will have to await another round of evaluation.

## CHAPTER II
## CROSS-SITE SUMMARY

This chapter provides a summary of the data sets collected from the various sites. In some cases, districts have varying systems for recording data, making it difficult to make valid comparisons across sites. However, some comparisons are possible.

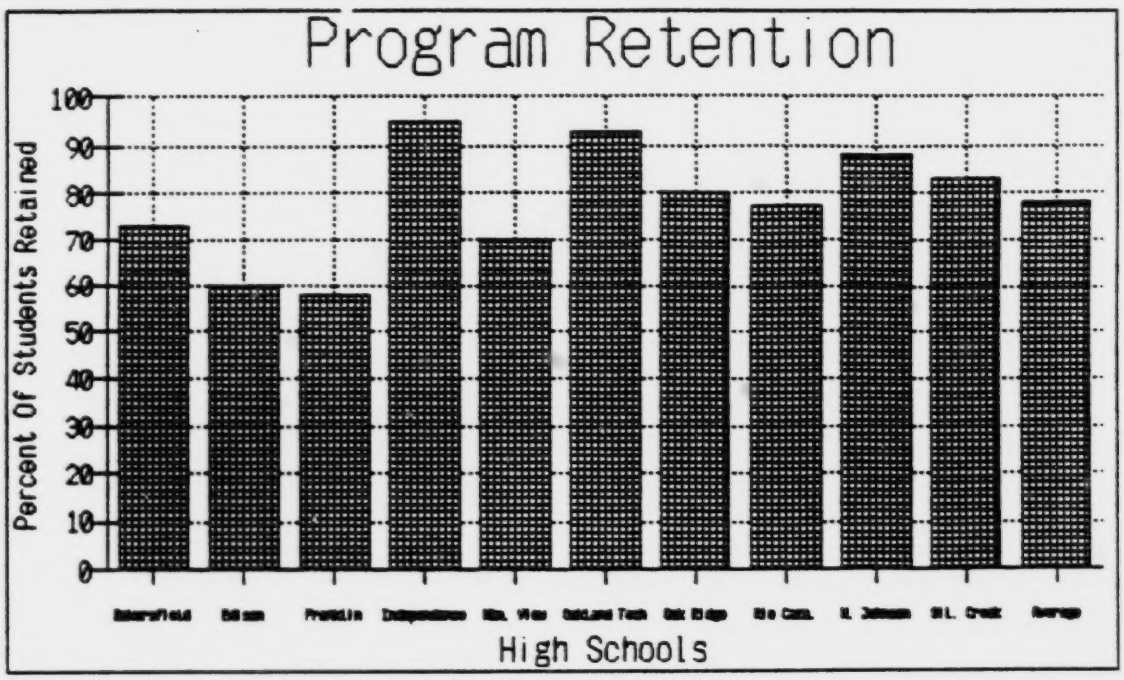
Data on the comparison groups are not presented in this chapter because of the questionable comparability of some of these groups and their presence in only six of the sites.

### Enrollments by Site, Sex, and Ethnicity

| | Sex | | Ethnicity | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| High School | Male | Female | Asian | Black | Hispanic | White | Other | |
| Bakersfield | 25 | 24 | -- | 8 | 25 | 16 | -- | 49 |
| Edison | 17 | 13 | 3 | 15 | 11 | 1 | -- | 30 |
| Franklin | 19 | 17 | 1 | 7 | 11 | 14 | 3 | 36 |
| Independence | 71 | 47 | 12 | 12 | 47 | 43 | 4 | 118 |
| Mountain View | 20 | 6 | 1 | 5 | 2 | 18 | -- | 26 |
| Oakland Tech | 14 | 28 | 7 | 29 | -- | 5 | 1 | 42 |
| Oak Ridge | 14 | 9 | -- | -- | -- | 23 | -- | 23 |
| Rio Cazadero | 23 | 20 | 2 | 4 | 5 | 32 | -- | 43 |
| Hiram Johnson | 36 | 33 | 11 | 23 | 13 | 22 | -- | 69 |
| Silver Creek | 65 | 37 | 2 | 24 | 45 | 28 | 3 | 102 |
| Total | 304 | 234 | 39 | 127 | 159 | 202 | 11 | 538 |
| Percent | 57 | 43 | 7 | 24 | 30 | 38 | 2 | 100 |

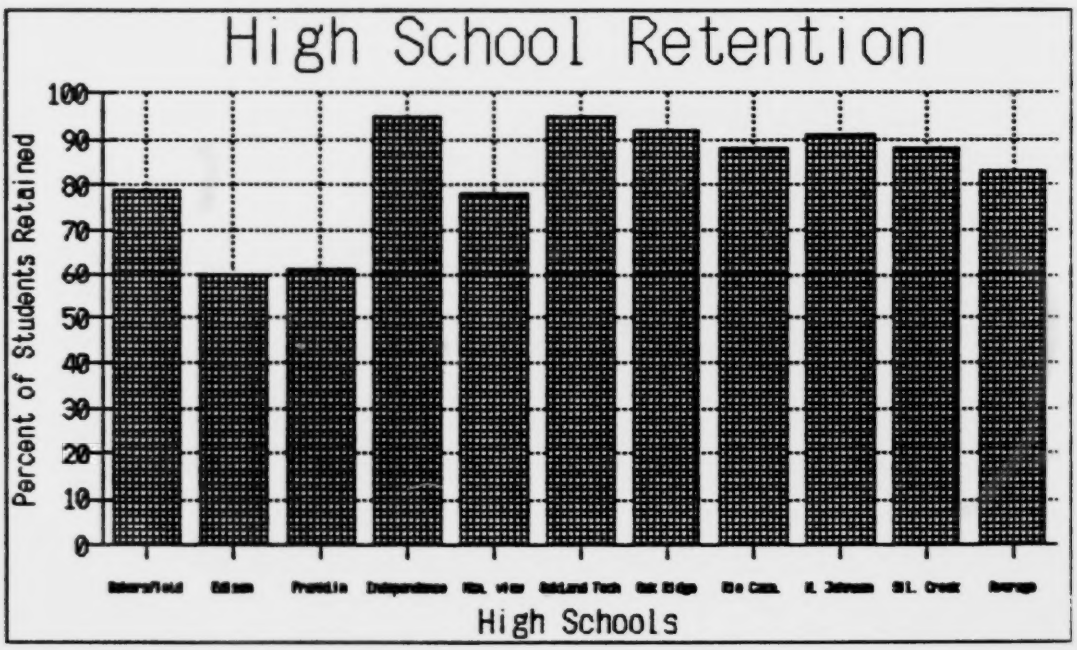
**Program Retention**

Retention is the opposite of dropouts. It is the percent of students who are retained in the program or high school. The graph below displays the program retention rate for the 1985-86 school year. This is the percent of Academy students who stayed in the program during the year. Those who left may have either returned to the regular school program, moved away, or dropped out. An average across the ten sites is provided, as well as the retention rate for each site.



**High School Retention**

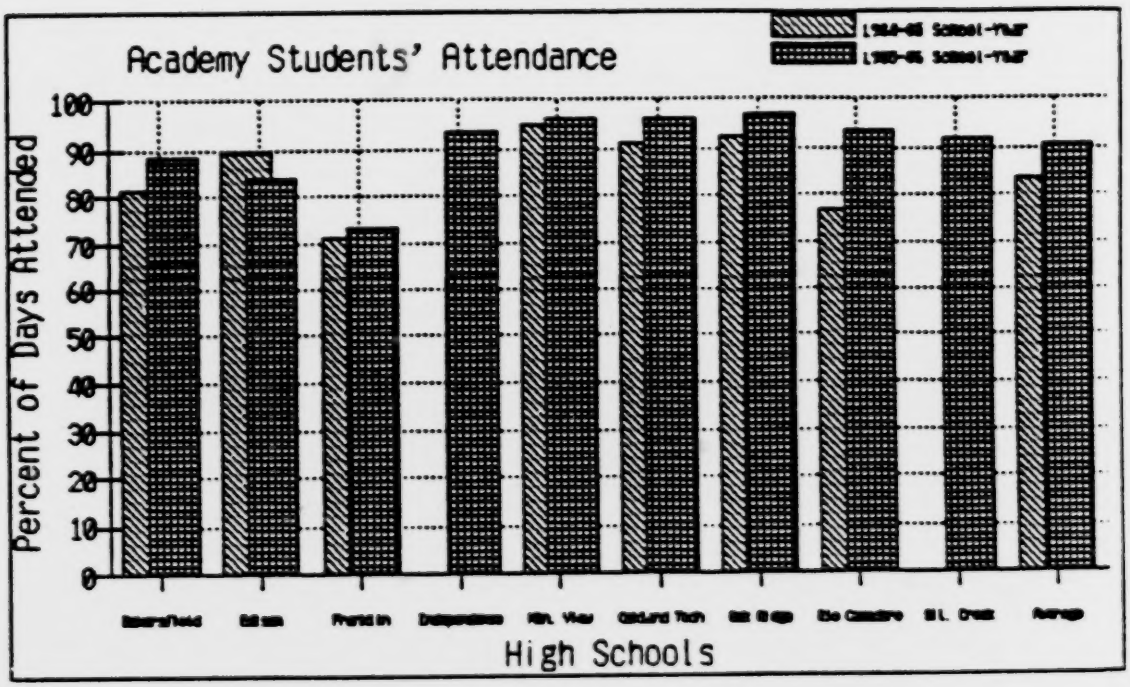
High school retention refers to the percent of students who remained in school throughout the 1985-86 school year. The graph below gives a picture of this for the Academy students in each of the ten high schools where programs operated.



**Attendance**

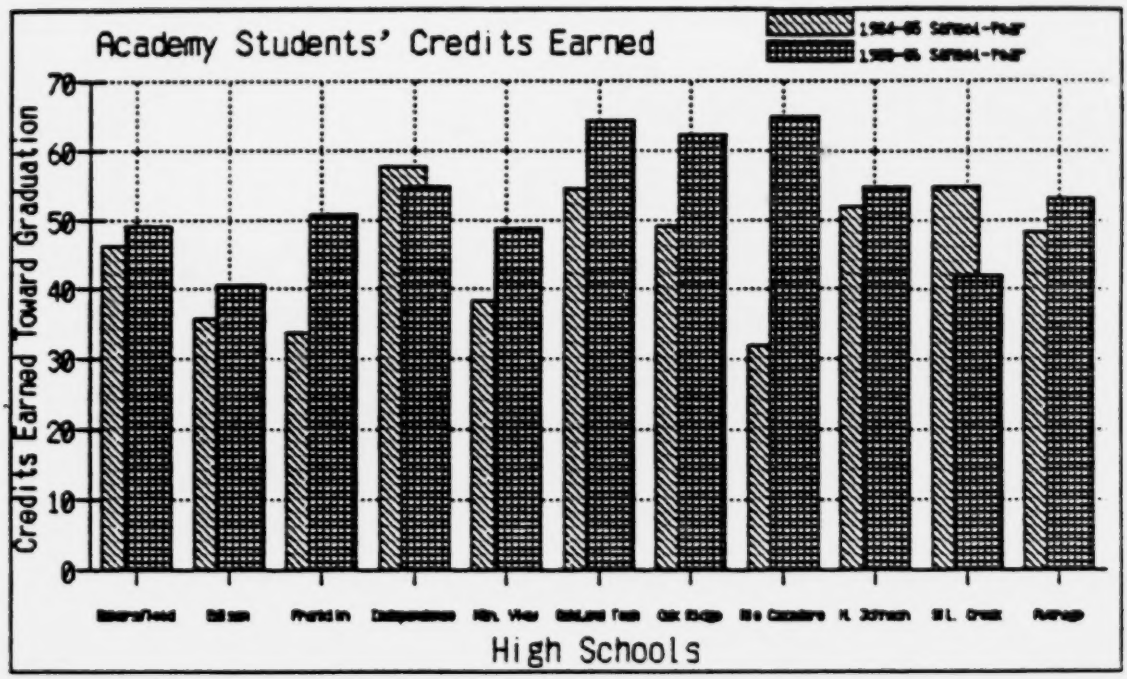
The graph below compares attendance levels for Academy students in the year prior to their entry into the program (1984-85) with the first program year (1985-86).

Data were not available from Hiram Johnson High School in Sacramento, because of the way attendance records are maintained. In addition, it was impossible to obtain 1984-85 attendance data for the two San Jose East Side Union District high schools, Independence and Silver Creek. This was because students entered the program at the ninth grade in these two schools, and their eighth grade records came from several different junior high schools, making them either impossible to obtain or inconsistent.



## Credits Earned

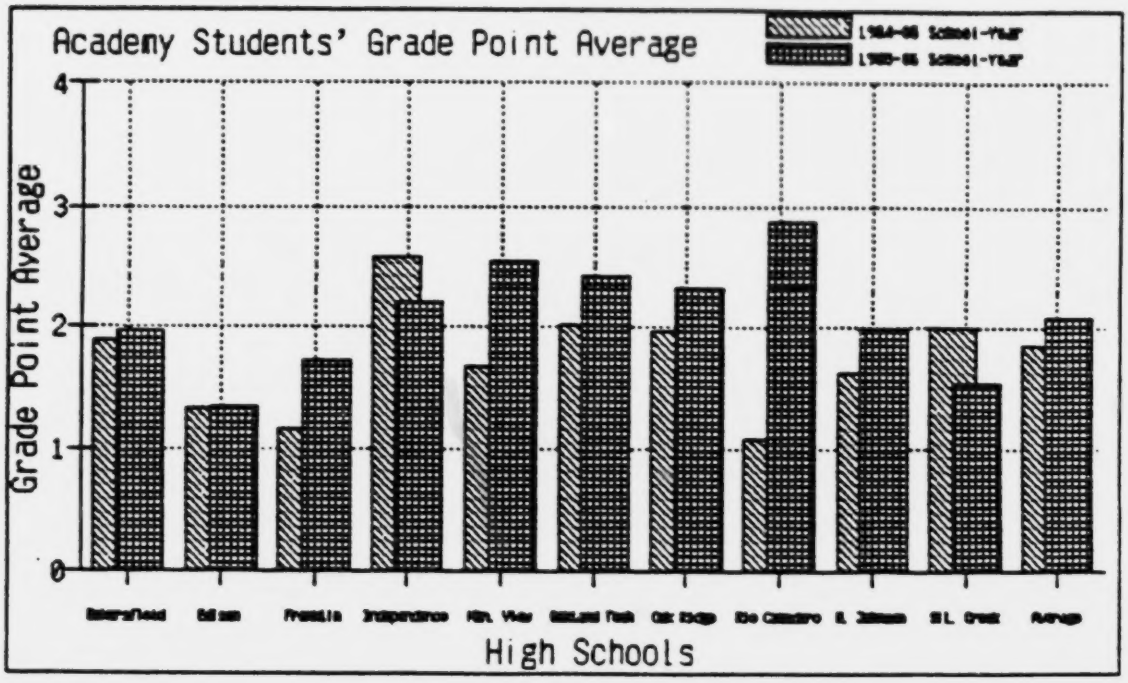
The graph below presents credits earned by Academy students for both the year prior to their entry into the Academy (1984-85) and their first program year (1985-86). While all ten sites are included in this graph, the data from the two San Jose East Side Union School District high schools, Independence and Silver Creek, are somewhat misleading. Here students entered the Academy in ninth grade, so that the 1984-85 data are from eighth grade. The system of credits in junior high school is somewhat different, giving the misappearance of a decline in credits earned during the past year.



## Grade Point Average

The graph below presents the Academy students' mean grade point averages for both the year prior to their entry into the program (1984-85) and for their first program year (1985-86). The grading system is the standard 4.0 system, where A=4, B=3, C=2, D=1, and F=0.

While all ten sites are included in this graph, the data from the two San Jose East Side Union School District high schools, Independence and Silver Creek, are somewhat misleading. Here students entered the Academy in ninth grade, so that the 1984-85 data are from eighth grade. The system of grading in junior high school is somewhat different, giving the misappearance of a decline in grades earned during the past year.

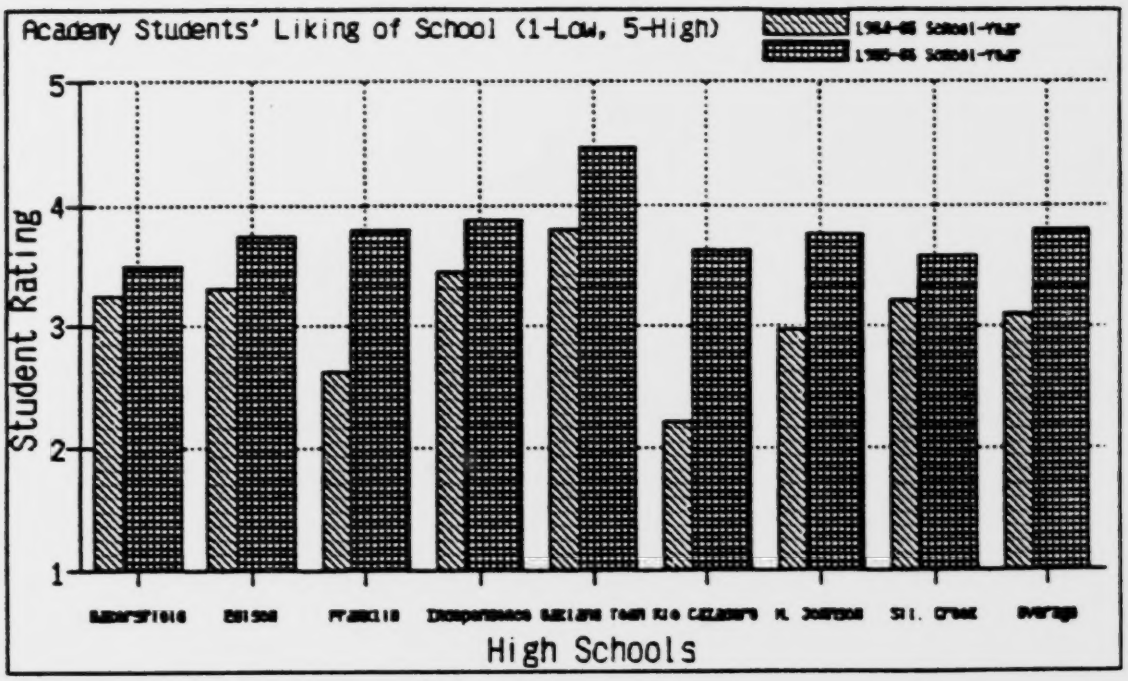


Students' Liking of School

The graph below presents Academy students' responses to a questionnaire administered at the end of the 1985-86 school year. One of the items on this questionnaire asked students: "How well did you like school in the past year?" Responses were across five options, ranging from "It was always boring" to "It was very interesting."

An earlier version of this questionnaire had been administered to the Academy students early in the fall 1985 semester, just after their entry into the program. Their response to this same question at that time gives a picture of their liking of school during the 1984-85 school year, before they entered the Academy. Both sets of ratings are presented in the graph.

Data are missing from two high schools, Mountain View and Oak Ridge, which failed to administer the full questionnaire, omitting this item.

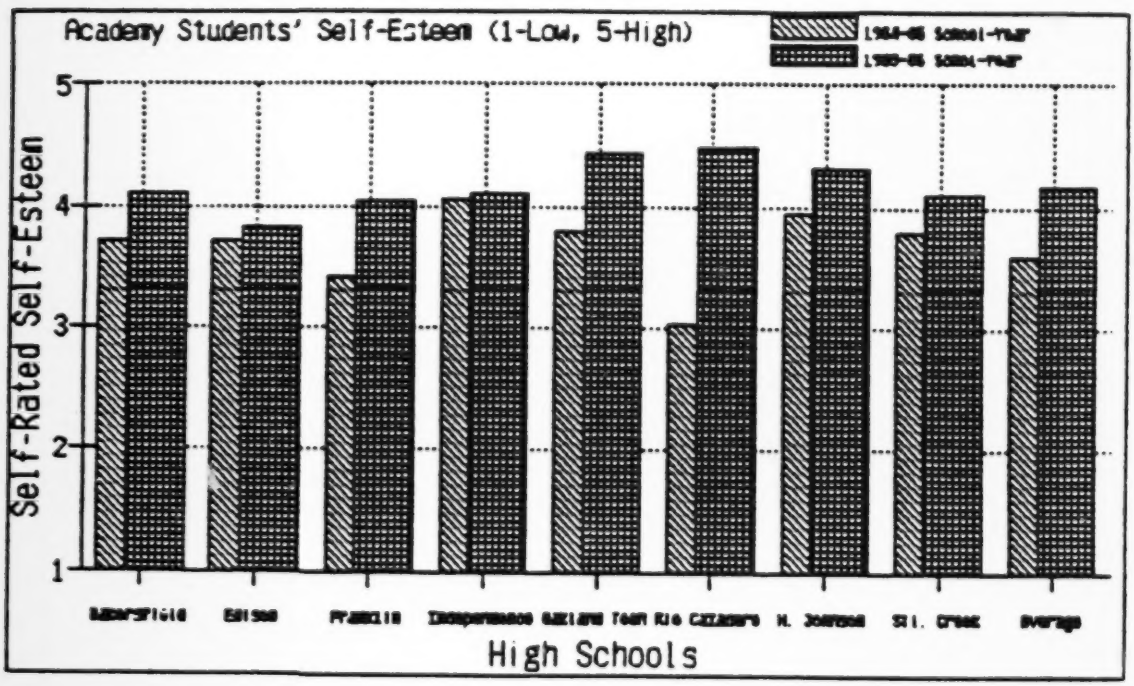


Students' Self-esteem

The graph below presents Academy students' responses to a questionnaire administered at the end of the 1985-86 school year. One of the items on this questionnaire asked students: "How do you feel about yourself after the past year?" Responses were across five options, ranging from "Very bad" to "Very good."

An earlier version of this questionnaire had been administered to the Academy students early in the fall 1985 semester, just after their entry into the program. Their response to a similar question at that time gives a picture of their self-esteem after the 1984-85 school year, before they entered the Academy. Both sets of ratings are included in the graph.

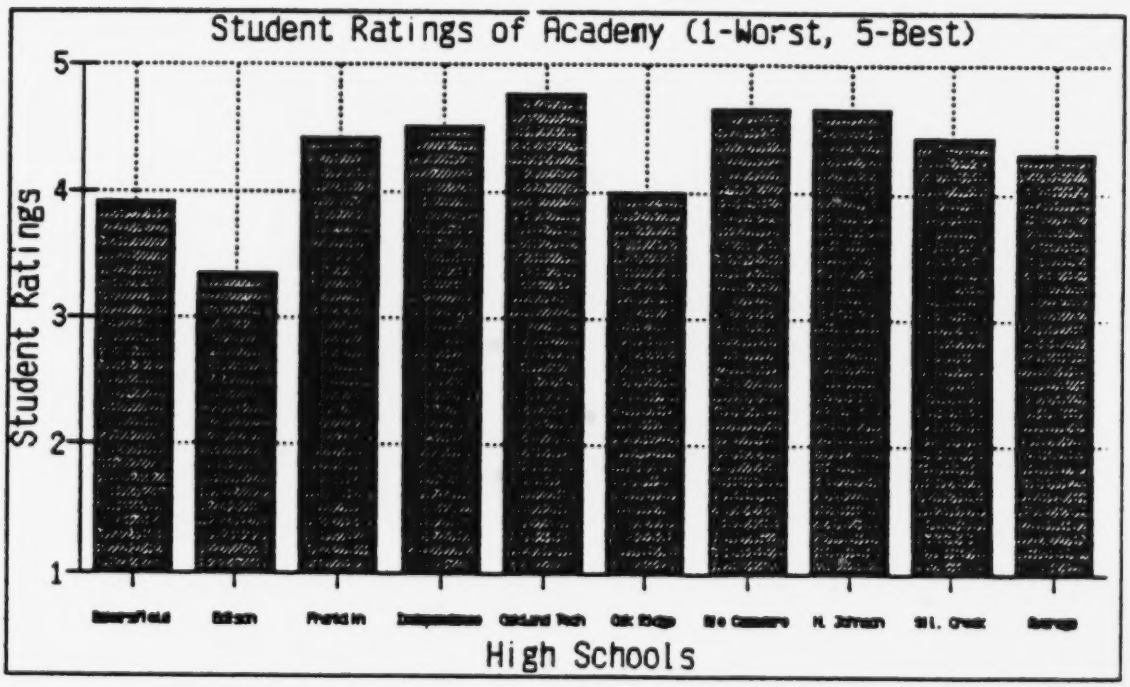
Data are missing from two high schools, Mountain View and Oak Ridge, which failed to administer the full questionnaire, omitting this item.



## Student Ratings of the Academies

The graph below presents the ratings students gave the Academies at the end of the 1985-86 school year. One of the items on a questionnaire administered to program students at that time asked: "Overall, compared to the regular school program, how well do you like the Academy program?" Responses ranged across five options, from "Much worse" to "Much better."

Data are missing from one of the high schools, Mountain View, which failed to administer the full questionnaire, omitting this item. (Note: the rating scale in this graph is reversed from that reported in the individual site summaries.)



## CHAPTER III
## ANALYSES AND CONCLUSIONS

This chapter provides a discussion of the findings across sites. Topics include first-year implementation, a cost analysis, conclusions regarding student impact, and recommendations.

### First-Year Implementation

Programs require a start-up period during which they are still being organized and not yet operating at peak effectiveness. The Academy model is complex, requiring substantial variations from ordinary high school operations and the involvment of the private sector. The original Peninsula Academies were not fully operational until after three years, when all classes were in place and all components of the program tested. Thus, the past year was a shakedown period for the ten replications.

There were start-up problems in most of the sites ranging from the trivial to the critical. All are still building the program in some ways. What are the most important factors that affected implementation? There were two central deviations from the Academy model, each of which occurred in a given district, and several components that require more attention in a number of sites.

- In one district, the two Academies failed to establish the team of teachers, and the coordinated set of academic classes, intended to accompany the technical lab. In these two schools, students had a career-oriented technical class. However, the lack of related Academy academic classes eliminated much of the school-within-a-school structure and related student and teacher support intended.

- In a second district, the choice was made to select approximately 100 ninth grade students, rather than the smaller number of tenth graders specified by the model, with the intent of operating the program for four years. This structure places a strain on program resources, as all the program's outside contributions (mentors, jobs) occur at once, a problem with which these programs are now struggling.

In addition, the following implementation issues played a role in a number of the sites:

- The degree of private sector involvement varied considerably from site to site. Where such involvement was weak, there was a negative effect upon the intended joint decision-making and program of guest speakers and field trips this first year. Strengtening this component will become even more important with the mentor and summer job components intended for the second year.

- The degree of coordination between the academic and vocational curriculum also varied this first year. This is a component that generally develops over time, but further attention to this facet of the model is needed in many sites.

- Several of the sites failed to provide the intended extra common planning period for program teachers. The original Peninsula Academies teachers found this to be essential if the needed program coordination is to take place.

- The degree of administrative support within each high school and district also varied. While this is something that generally develops over time in sites where administrative support was weak, there were problems that should be addressed.

- The student selection procedure is another important implementation issue, as program staff develop a sense for what students can best benefit from the program. Modifications in these procedures are needed in several sites.

- Another factor that probably contributes to program success is the degree of parental involvement. Again, this varied from site to site this first year.

The quality of implementation in each of the sites and the degree to which the Academy model was followed seems to be closely related to initial program success. In those sites where the model was carefully followed and implemented, success in terms of student outcomes has been greatest. Where this has been less the case, weaker outcomes seem to have resulted. This argues for a consistent adherence to the Academy model, and for developing those components now weak or lacking in the sites where such is the case. The individual case studies in Chapter I provide specific recommendations in this regard for each site.

Cost Analysis

It was not possible at this stage to develop a useful benefit-cost analyses of these programs. They are too early in their development, their impact is as yet too unclear, and the data are simply too sketchy. Thus, what is presented here is information on Academy costs, along with analyses of dropout prevention and employment preparation program benefits performed by other researchers.

The social benefits of such a program are most easily stated in terms of the social costs avoided when students complete school, rather than drop out. A number of attempts have been made to estimate the cost to society of youth who drop out of school and become unemployed. None of these provide precise measures of these variables, but we present them with the hope imprecise information is better than none. The approach is generally to gauge both the direct costs of social services directed to such unemployed youth and the lost taxes from their not working. One analysis, entitled "Youth Unemployment in New York City: The Cost of Doing Nothing," (Interface, 1983) made such an attempt for that city. It concluded that:

> ...for every one thousand 20 year olds put to work, the city would regain $163,702 in income and sales tax revenues. Add that to the direct cost of AFDC benefits for those one thousand youths and their children, and you have $1,216,452 added to the city coffers in the first year of their employment or more than $1,200 per youth....

Another analysis done in New York City, entitled "The Value of Youth Work," (Interface, 1984) analyzes the benefits over ten years of providing a $10,000/youth one-year training program to 1,000 unemployed youth. This analysis assumes a 47% placement rate and 1984 wages in that city. Given the reduced welfare costs and increased city income and sales tax revenues, "For every dollar in public expenditures on this project, the city would realize $1.21 in benefits." The additional benefits in state and federal taxes were not calculated, since the analysis was focused on just New York City.

A study done for Los Angeles along the same lines, entitled "On the Social Costs of Dropping Out of School," (Catterall, 1985), examines the

lifetime effects on earnings, lost taxes, and added societal costs for those who fail to graduate from high school. Averaging these figures for males and females (Catterall computes them separately) gives the following picture for a dropout:

| | |
|---|---|
| Lost income (over a lifetime) | $154,500 |
| Lost taxes (all levels) | 46,350 |
| Additional societal costs | 24,400 |

The "additional societal costs" he lists include police and crime-related services, employment services, welfare services, and health services. While the lost income should probably be viewed as a personal cost of dropping out, the other two categories are clearly societal costs, and total $70,750 per youth. Again, these should be viewed as rough estimates.

What does an Academy program cost? Each Academy receives a $50,000 annual grant from the state. The legislation requires a match of this amount from both the district and cooperating businesses. While this match is largely in terms of in-kind services, the state allotment nevertheless leverages a considerable contribution from these other sources, and in the case of the business contribution, this is support that would not otherwise go toward the education of youth.

What is the per-student cost of an Academy over and above each district's regular per-pupil expenditure? This of course varies from site to site, since varying numbers of students were served in different sites. Across the ten programs, 538 students were enrolled in the Academies. Given the total state budget of $500,000 for the ten grants in 1985-86, this averages $929/student.

This figure is somewhat misleading on the eventual per-pupil cost of the program, since students enter each year at the tenth grade and move up, and this first year only tenth graders were in place. Thus, approximately twice as many students will be served during 1986-87 as were in 1985-86, and even more in 1987-88 (although attrition will probably reduce this increase somewhat). Perhaps a fair estimate of the eventual cost of the program to the state, under the current funding formula, is approximately $500 per student per year. To this must be added approximately $1,000 per student in largely

in-kind contributions from the matching district and business support. Across the three years of the program for a given student, this totals $1,500 in state costs and $3,000 in matching support, for a total of $4,500. (This is over and above each district's regular per pupil expenditure.) These figures, too, are estimates. Data reflecting actual program income and expenditures will be collected during the next two years.

Student Impact

There are four categories of information examined here in terms of the Academies on students. They are:

- School-related outcomes, including retention in high school, attendance, credits earned toward graduation, and grade point averages
- Students' career planning
- Students' attitudes toward school and themselves
- Student ratings of the programs and the relationships between these ratings and factors that seem to explain them.

School Related Outcomes. Of the various indicators of program effectiveness, the school related outcomes--attendance, retention, credits earned for graduation, and grade point average--are the most important. They provide concrete evidence of educationally important changes in the program participants.

To be able to conclude with full confidence that the programs did, indeed, affect these key outcomes requires a robust evaluation design, which is fully implemented. Such a design is required, of course, in order to rule out other factors and explanations that could account for changes in the program participants during the time they were in the Academies.

Unfortunately, due largely to a variety of logistical problems, such an evaluation was not possible in many of the sites, with the result that those data which were collected on attendance, retention, credits, and GPA are often ambiguous. Thus, in most of the ten sites it is not possible to determine

from the data which were collected on these outcome measures whether or not the programs had an impact. That determination, as an overall judgment across the ten sites, will have to await the next round of evaluation, where it is hoped the planned improvements in the evaluation will allow this.

The principal evaluation deficiencies which occurred in varying degrees of seriousness across the sites were three:

- The lack of comparison groups. Four of the sites opted not to have such a group.
- The non-comparability of comparison groups. Even the sites where comparison groups were set up, their frequent lack of comparability to the Academy population on one or more of the matching variables (which included sex, race/ethnicity, and past attendance, credits, and grades) made it difficult to use the data from these groups to estimate the effects of non-treatment.
- Failure to collect the necessary data on attendance, retention, credits, and grades on a pre-post basis for both the treatment and comparison groups, which was due in most cases either to the unavailability of such data, or lack of staff to perform the collection.

Plans are in place to correct these problems, to the degree possible, in the next round of evaluation.

Despite the fact that these evaluation shortcomings were present to some degree in most sites, there is, nevertheless, highly encouraging data from one site, and more tentative but also encouraging evidence from two others, that the Academy programs are having positive impact on attendance, retention, credits, and grades. The importance of this is that it demonstrates that the Academy concept can work.

Students' career planning. The second category of information examined here is the effect of the Academies on students' career planning. This information comes from the pre-post student questionnaires, which were administered early in the fall 1985 semester, prior to any significant program impact, and again at the end of 1986 spring semester.

Have the Academies had an effect on students' career planning? Three questionnaire items speak to this question. The first asks students whether they had made post-graduate plans. In the pre-test, the average response (on a scale ranging from 1--"I haven't thought about this," to 5--"I have a definite plan and have begun to implement it") was 2.8 and on the post-test 2.9. This shows a slight but minimal improvement. The second item asks students if they had a long-term career goal. On the pre-test 59.7% responded positively and on the post-test 60.5% did so, again a very minimal increase. The third item asks students how important it was to gain job skills in high school (with responses ranging from 1--"Very important," to 5--"Very unimportant"). The mean pre-test score was 1.3, and the mean post-test score was 1.3. Based on these three sources of information, the Academies seem not to have had an effect on students' career planning. However, Academy staff point out that 10th grade is still early for post-graduate plans to be set, and that students are becoming more sophisticated about their options.

Students' attitudes toward school and themselves. Have the Academies had an effect on students' attitudes toward school? One questionnaire item speaks to this question. It asks students how well they liked school in the past year. The mean pre-test score (on a scale ranging from 1--"It was always interesting," to 5--"It was always boring") was 2.9, and the mean post-test score was 2.2. This is a statistically significant change ($p < .01$), and suggests the Academies have had a positive effect on students' attitudes toward school.

Have the Academies had an effect on students' attitudes toward themselves? Two questionnaire items speak to this question. The first asks students how they feel about themselves after the past year (e.g., in terms of school, friends, and their future). The mean pre-test score (on a scale from 1--"Very good," to 5--"Very bad") was 2.3 and on the post-test, 1.8. This is a statistically significant change ($p < .02$). The second questionnaire item asks students if they would prefer to be someone else. On the pre-test, 32.6% say yes, and on the post-test 25.2% do so. This is also a statistically significant change ($p < .02$). Based on these two items, the Academies seem to have positively influenced students' self-perceptions.

Student ratings of the programs. Students were asked to rate how well they liked the Academy, in comparison with the regular school program, on a scale ranging from 1--"Much better," to 5--"Much worse." The mean rating across the sites was 1.7, which falls between the "Much better" and "Slightly better" options.

We decided to examine correlations between this rating and other factors. One such factor stood out. One questionnaire item asked whether students felt they received "the help they needed with their school work or home work" during the past year. A correlation of .83 between this and the program rating was found. In short, a great deal of the variation in the students' ratings of the Academy program derived from this.

We then decided to examine whether receiving this needed extra help correlated with other variables. The correlation coefficient between this factor and attendance was .51 and between this and GPA it was .73. This suggests that a key to the performance of students in the Academies is whether they feel they receive the help they need with their school work. This finding is consistent with the Academy attempt to provide a secure "home base" in the high school and the extra support that at-risk students often need to succeed.

## Recommendations

Evidence from a few well implemented sites, suggests that while this model has the potential to have a significant impact on student outcomes, careful implementation and adherence to certain central features of the model are necessary. Those sites that most fully followed the model and most carefully implemented the program showed the best results. What are the features of the model that appear critical to success?

- A defined student selection process that results in the enrollment of potentially successful, at-risk youth in the program;

- That the full school-within-a-school structure be implemented, so that Academy students have in common both a technical class and a core set of academic courses, taught by teachers who have a common preparation period during which they can coordinate their activities and curriculum;

- Strong private sector support, including: involvement in a governing body so that decision-making is conducted jointly by educators and employers; input into the technical curriculum; and support for certain critical features of the program, including business speakers, field trips, mentors, and work experience;

- Strong district and school support, so that Academy teachers have the necessary planning time to coordinate the program's activities, school counselors and administrators support the program, and the facilities, equipment, and curricular materials are adequate.

In addition to these necessary core elements, feedback from the sites during the last year suggests the following specific elements of the programs need attention in a number of sites (and any future sites):

- Full orientations to the Academy concept and structure, and staff development training in areas where program staff may lack skills to operate an Academy;

- Structuring the program's facilities so that there is a "home base" classroom at each school dedicated exclusively to the program;

- Establishing a reasonably broad base of private sector participation, so that too heavy a load does not fall on one or two companies;

- Communicating regularly with parents and giving them specific avenues for participation;

- Where possible, integrating not only the schedule and staffing for the academic and technical courses, but the curriculum as well;

- Strengthening the career planning component of the program by expanding contacts between students and private sector representatives and including career planning as a specific element of the curriculum.

The fact that not all these elements were present at a number of the sites during the 1985-86 school-year raises the question of how to correct this problem. While there is a case to be made for some flexibility in the

model, and the first year of most programs includes start-up problems, there is also the need to enforce the core features of the model essential to its success. The following represent recommendations in this regard:

- Stricter administration of the grants by the State Department of Education, including a mechanism for cutting off grants where called for;
- Fuller training of site representatives in the model, prior to and during its implementation;
- Language in the legislation supporting the programs that includes clearer and firmer guidelines for receipt of state money for support of an Academy.

In addition, the weaknesses in the evaluation itself need to be corrected. These weaknesses include the lack of comparison groups in all sites, the need for complete matching between program and comparison groups, and the collection of all categories of data called for in the evaluation design. Fuller information regarding program implementation also needs to be collected, including data on income and expenditures. Resources were not available to permit all of this during the past year, but have now been provided by two private foundations.

Questions for Further Research

An additional two-year evaluation of the Peninsula Academy replications is now planned, supported by private foundations. In addition to those addressed in this report, we hope to answer the following questions:

- What are the longer-term effects of the Academy replications in terms of their implementation, cost, and impact on students?
- What are the effects of the program on students' scores on standardized achievement tests?
- What is the relationship between student outcomes and student characteristics, such as grade level, sex, race, and socio-economic status?
- Is the program as a whole, and the effective sites in particular, cost beneficial?

In addition to these questions, we will address the larger issue of the relationship of the Academies to other efforts aimed at motivating and helping at-risk youths better to prepare for their future. The results of this research should complement other state and national efforts in this realm.

## REFERENCES/BIBLIOGRAPHY

Interface. Youth Unemployment in New York City: The Cost of Doing Nothing. New York: The New York Interface Development Project, Inc., 1983.

Interface. The Value of Youth Work. New York: The New York Interface Development Project, Inc., 1984.

Catterall, James S. On the Social Costs of Dropping Out of School. Los Angeles: University of California, Los Angeles, 1985.

In addition to this report, there is a complementary one on the Peninsula Academies replications, prepared by the Program Evaluation and Research Division of the California State Department of Education. It does not contain data on student outcomes, or questionnaire feedback, but it does provide insights into the factors influencing success of the Academies, based on site visits and interviews with a cross-section of those associated with the programs in each site.

There are also a number of evaluation reports on the Peninsula Academies themselves, including yearly "Interim" reports from 1981-82 through 1985-86, a three-year "Final Technical Evaluation Report" (December, 1984) that summarizes data across the three previous years, and an "Interim Longitudinal Report" (November, 1985) that summarizes the findings of a follow-up survey of Peninsula Academies graduates. These reports were prepared by the American Institutes for Research, P.O. Box 1113, Palo Alto, CA 94302.

## APPENDIX

## TECHNICAL NOTES

### Notes on Site Summary Reports-Data Sources, Categories, Comparison Groups, and Analyses

**Data Sources:** Data on attendance, credits, and grades were collected by local project staff. Questionnaires were developed by the authors of this report and were administered by local project staff. The Incoming Student Questionnaire was administered within two weeks of the start of school in fall, 1985, and the Year-End Student Questionnaire during the last month of school in spring, 1986. The School Personnel Questionnaires, Parent Questionnaires, and Private Sector Questionnaires were also completed toward the end of the school year. Academy teachers, administrators and others associated with the program were instructed to complete the School Personnel instrument; in some sites, non-Academy personnel also responded to this questionnaire. Project directors were instructed to select from four to six parents and about the same number of private sector supporters to complete questionnaires. No attempt was made to sample these groups statistically.

**Data Categories:** Attendance. Daily attendance rates for each student were calculated by dividing the number of days attended (using the school's method of determining attendance for ADA purposes) by the number of days the student was enrolled at the school during the semester in question.

Credits. This figure represents the number of course credits earned during the reporting period.

GPA. The grade point average for each student was calculated at each site, using the scale F=0, D=1, C=2, B=3, and A=4. All replication sites gave grades of F when warranted. Incompletes were not counted. The GPA includes grades from all courses, Academy and regular program, taken by the student during the reporting period.

Retention in Academy. A student is considered to have been retained in the program if he or she was enrolled in the Academy through the end of the school year in June 1986.

Retention in School. A student was considered to have been retained in school if he or she was enrolled in the Academy's host high school through the end of the school year. This figure includes students in the Academy and

those who left the program for any reason but stayed in school. Those not retained in school include those who left for legitimate reasons (for example, moving away) as well as those who dropped out or were expelled or suspended from school.

**Matched Comparison Groups**

Attempts were made in each of the six sites electing to have a comparison group to match members of this group with the Academy students on the basis of high school and grade level, as well as sex and ethnicity. In addition, attempts were made to match on the basis of past attendance, credits, and grade point average. Results of these attempts are presented in each of the case studies in Chapter I.

**Data Analysis: (Attendance, Credits, and Grades)**

1984-85 Academy and Comparison Group Analyses. One-way Analyses of Variance (ANOVA) for independent groups were used as tests of significance. The analyses included all students for whom 1984-85 data were reported.

1985-86 Academy and Comparison Group Analyses. One-way ANOVA for independent groups were used as tests of significance. The analyses included only those students who had data from both semesters. That is, Academy students who dropped out of the program and comparison students who left school were not included, unless data (e.g., attendance, credits, or grades) were reported for them for each semester. It is for this reason that the Ns for these analyses are usually smaller than those for either the fall or spring semester analyses.

Fall 1985 and Spring 1986 Semester, Academy and Comparison Group Analyses. One-way ANOVA for independent groups were used as tests of significance. For each semester, the analyses included all students for whom data were available, including, in some cases, students who dropped out of the program or out of school. (In some school districts, records of dropped students are retained and available, while in others they are not.)

1984-85 and 1985-86 Academy Student Only Analyses. Tests of significance (t tests for two matched groups) were conducted. The analyses included only those students for whom data were reported for both school years. That is, the analyses exclude those Academy students who left the program and for whom data were missing for either the fall or the spring semester of 1985-86, as well as Academy and comparison students who left school. Thus, for these analyses, the Ns for 1984-85 are smaller than those used to compare the Academy and comparison groups during the pre-treatment year.

Fall 1985 and Spring 1986 Semester Academy Student Only Analyses. Tests of significance (t tests for two matched groups) were conducted to see whether students improved their performance in the Academy during the school year. The analyses included only those students for whom data were available for both semesters.

## Notes on Cross-Site Analysis-School Records and Questionnaire Data

**Attendance, Credits, and Grades:**

T tests for two independent groups were used as the test of significance for the total average attendance rates, number of credits earned, and GPAs for the Academy and comparison students at the six replication sites which had comparison students. Thus the unit of analyses in these tests was sites, not individual students, resulting in a conservative approach to finding significant differences.

T tests for independent groups were used as the test of significance for the total average attendance rates, number of credits earned, and GPAs for Academy students during the 1984-85 and 1985-86 school year (pre- and post-treatment). Sites without pre-treatment data on any one measure (attendance, credits, grades) were excluded for that analysis.

**Student Questionnaire Responses:**

T tests for two matched groups were used to analyze pre-post differences in responses to questionnaire items tapping career planning, attitudes toward school, and self-esteem.

Correlation and regression analyses were used to establish relationships between the following pairs of posttest questionnaire items:

(a) attitude toward school/overall rating of Academy program
(b) frequency of receiving needed extra help with school work/ overall rating of Academy program
(c) frequency of receiving needed extra help with school work/ attendance rate
(d) frequency of receiving needed extra help with school work/ GPA
(e) GPA/overall rating of Academy program
(f) attendance/overall rating of Academy program